CARIBOU FOREST

INDEPENDENT FOREST AUDIT
2004-2009

Arbex Forest Resource Consultants Ltd.
Oxford Mills, Ontario
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1.0. EXECUTIVE SUMMARY

This report presents the findings of an Independent Forest Audit (IFA) of the Caribou Forest (SFL # 54248) conducted by Arbex Forest Resource Consultants Ltd. for the period April 1, 2004 to March 31, 2009. Forest Management Plans (FMPs) in the scope of the audit included the last 3 years of the 2002-2007 FMP, a 2007-2008 Contingency Plan and the first year of the 2008-2018 FMP.

The SFL holder for the audit term was Bowater Canadian Forest Products Inc. a subsidiary of AbitibiBowater[1]. The Forest is administered by the Ontario Ministry of Natural Resources (OMNR) Sioux Lookout District Office.

The SFL holder, contractors, and the OMNR (i.e. District, Region and Corporate) were audited to the extent that their activities were the subject of IFA examination.

The audit conformed to the requirements of the 2008/2009 Independent Forest Audit Process and Protocol (IFAPP) prepared by the OMNR. The IFA process is based on a detailed assessment of eight broad principles. Each principle has associated criteria which are examined to determine if the management of the Forest was in compliance with provincial legislation, regulations and policies that were in effect during the audit term.

The implementation of the caribou strategy dominates all aspects of the Caribou Forest's planning, operations and long term direction. The economic downturn in the forest industry over the past few years, the insolvency of the major volume commitment holder Buchanan Forest Products Ltd. (BFPL), and the curtailment of operations at the Hudson mill contributed to the SFL holder's inability to achieve planned harvest levels. This underachievement of the planned harvest levels, if continued, will have serious implications for the achievement of long term management objectives related to wood supply and caribou management. Despite this long term management challenge we determined that forest sustainability was achieved for the audit term.

The management of the Forest was generally in compliance with the legislation, regulations and policies that were in effect during the audit term and there was compliance with the terms and conditions of the Sustainable Forest Licence. The audit team recommends the Minister extend the term of Sustainable Forest Licence # 54248 for a further five years.

This conclusion was based on the following audit findings:

[1] We use the terms AbitibiBowater and Bowater interchangeably in this report.

- Appropriate information was available on the Forest and its values to support planning requirements.
- Forest management planning activities adhered to Forest Management Planning Manual (FMPM) requirements.
- The Local Citizens Committee (LCC) was properly constituted and actively participated in the planning and implementation of forest management activities.
- Areas of Concern (AOC) were appropriately protected through proper planning and implementation of forest management prescriptions.
- Forest management activities (e.g. harvest, renewal, tending) adhered to appropriate manuals and field operations were implemented with minimal evidence of environmental degradation.
- Forest operations were compliant with the Crown Forest Sustainability Act (CFSA), manuals, guidelines and the applicable FMP.
- There were few compliance issues and compliance inspections were appropriate for the level of field operations.
- Forest management records were generally well organized and accessible.
- OMNR and AbitibiBowater made reasonable efforts to assist First Nation communities to participate in the forest economy.
- With the exceptions noted in this report, recommendations of the 2004 IFA were satisfactorily addressed.

Issues identified in the report included:

- There is a need to ensure that the natural benchmark run and bounds of natural variation are clearly defined and documented in the next FMP.
- Future FMPs and Analysis Packages need to clearly document the methodology and rationale for all modeling inputs.
- There is a requirement to amend FMP- 4 (2008 FMP) to remove unavailable area from the available area total.
- There is a need to assess the current Free-to-grow data collection and assessment procedures to ensure all information requirements for monitoring the caribou strategy are met.
- Slash and debris management issues on the Forest need to be resolved.
- There is a requirement for District OMNR to collaborate with AbitibiBowater to develop and implement a strategy to address forest

management and/or compliance obligations associated with the BFPL commitment area.

- Cross-drainage culvert installation and maintenance needs to be improved.
- AbitibiBowater must meet all FMPM reporting requirements for Annual Reports. AbitibiBowater also needs to improve the initial quality of reports that are submitted to the OMNR.
- There is a need to assess the viability of planned harvest levels in the context of the chronic under achievement of planned harvest levels.
- There is a need to monitor and assess the effectiveness of the caribou mosaic strategy (and its associated silvicultural and access management strategies) in providing habitat and preserving caribou populations.

Twelve recommendations have been provided to address these issues.

2.0. INTRODUCTION

This report presents the findings of an Independent Forest Audit of the Caribou Forest (SFL # 54248) conducted by Arbex Forest Resource Consultants Ltd.[2] for the period April 1, 2004 to March 31, 2009. This audit assessed the forest management activities of Bowater Canadian Forest Products Inc. (a subsidiary of AbitibiBowater) and the Ontario Ministry of Natural Resources, Sioux Lookout District. Corporate and Regional OMNR and overlapping licencees and contractors were also considered as auditees to the extent that forest management activities carried out by them were the subject of IFA examination.

The scope of the audit is determined by the OMNR and audit procedures and criteria are specified in the 2008-2009 Independent Forest Audit Process and Protocol (IFAPP) developed by the OMNR. The intent of the IFAPP is to provide a consistent and comprehensive method of evaluating forest management activities on Crown land and to ensure that the findings of the audit are supported by documented evidence. Forest Management Plans (FMPs) in the audit scope included the last 3 years of the 2002-2007 FMP, the 2007-2008 Contingency Plan and the first year of the 2008-2018 FMP. The audit also examined the planning and development of the 2008 FMP.

2.1. Audit Process

The Crown Forest Sustainability Act (CFSA) requires that Sustainable Forest Licences (SFL) be audited every five years by an Independent Auditor. The audit also applies to the Ontario Ministry of Natural Resources (OMNR), and all licencees on the management unit. The audit considers the compliance aspect of forest management planning by reviewing the management plan in relation to specific planning manual requirements in place at the time of plan approval, including a review of actual operations and required monitoring and reporting. The effectiveness of forest management activities is examined based on planned vs. actual results as verified through record examination and field sampling. The audit reviews whether actual results in the field are comparable with planned results and determines if they are accurately reported.

The IFAPP provides a comprehensive and consistent method of evaluating forest management activities on Crown land. It contains individual procedures that direct the Independent Auditor to collect, analyze, interpret and document appropriate information to determine if various criteria have been met. The results of the evaluation of evidence against the criteria determine the audit findings. Those findings are then analyzed and aggregated to determine the audit results.

[2] A list of the audit team members and their qualifications is presented in Appendix B.

The IFAPP states that the purpose of the Independent Forest Audit (IFA) is to assess:

- The compliance of forest management planning activities with the Forest Management Planning Manual (FMPM) and the Crown Forest Sustainability Act (CFSA).
- The compliance of forest management activities with the CFSA, applicable manuals and guidelines and the Forest Management Plans.
- The effectiveness of forest management activities in meeting the forest management objectives set out in the Forest Management Plans, as measured in relation to the criteria established for the audit.
- The relative success of forest management activities carried out compared to those that were planned.
- The effectiveness of any Action Plans implemented to remedy shortcomings revealed by a previous audit.
- The licencee's compliance with the terms and conditions of the Forest Resources Licence.

The audit process is based on a detailed assessment of eight IFAPP principles:

- Commitment,
- Public Consultation and Aboriginal Involvement,
- Forest Management Planning,
- Plan Assessment and Implementation,
- System Support,
- Monitoring,
- Achievement of Management Objectives and Forest Sustainability,
- Contractual Obligations.

Each IFAPP principle has a series of specific criteria which, if met, will result in the achievement of that principle. The specific criteria are based on applicable legislation, manuals, and guidelines related to forest management contained in the 2008 - 2009 IFAPP. The audit consisted of the following elements:

Audit Plan: An audit plan describing the schedule of audit activities, audit team members, audit participants and auditing methods was submitted to AbitibiBowater, OMNR (Corporate, Region and District), the Forestry Futures Committee and the Chair of the Local Citizens Committee (LCC) in April 2009.

Public Notices: Public input to the audit was solicited through the posting of a public notice in the Sioux Lookout Bulletin and the Wawatay News, and a random mailing to 35% of the individuals listed in the Caribou Forest FMP mailing list. A questionnaire related to forest management on the Forest during the audit period was also posted on the Arbex website.

With advice from the OMNR Native Liaison Officer, invitations to participate in the audit were also sent by mail to all First Nations with an identified interest in the Forest. Follow-up telephone calls were also made to the First Nations. Members of the Local Citizens Committee (LCC) received notification of the audit by mail.

Field Site Selection: Field site selections were made by the Lead Auditor and the Arbex GIS Specialist in May, 2009. Site selections were confirmed and finalized with AbitibiBowater and OMNR District staff in conjunction with the pre-audit meeting.

Pre-Audit Meeting: The pre-audit meeting was held with AbitibiBowater and OMNR staff, a LCC representative and an Overlapping Licencee representative on May 6, 2009. This meeting outlined the purpose, expectations and deliverables of the audit and provided the OMNR and SFL holder with an opportunity to review selected field sites and provide comment on the Audit Plan.

Pre-audit Document Review and Interviews: The 2002-2007 FMP, 2007-2008 Contingency Plan, the 2008 FMP and all associated documents (i.e. Annual Reports, Compliance Plans, Report of Past Forest Operations, LCC and Planning Team minutes, etc.) were reviewed in preparation for the field sampling phase. Telephone interviews and e-mail exchanges were also undertaken with representative stakeholders.

Site Inspections: The audit team spent eight days in Sioux Lookout conducting the field audit and completing document reviews and interviews. The objective of the field sampling was to confirm that field activities were conducted in accordance with the FMPs and complied with existing guidelines, laws and regulations that were in effect during the audit period.

The field inspection sampled between 10% and 100% of all forest management activities conducted during the audit period (Table 1). The field sample was stratified to ensure adequate representation of the different silvicultural systems, forest management activity (e.g. tree planting, mechanical site preparation), season of operation, contractors, and year of operation. The audit team also viewed the implementation of Areas of Concern (AOC) prescriptions, water crossings, and road construction and maintenance work.

Areas listed in the "Forest Roads and Maintenance Agreement" and areas invoiced under the "Forest Renewal Trust Specified Procedures Report" were also inspected to ensure conformity between invoices submitted to the OMNR

and actual work completed. The Forest Renewal Trust Specified Procedures Report was not available at the time of the field assessment. Copies of maps provided by AbitibiBowater were used for the field verification.

The field inspections included site-specific (intensive) and landscape-scale (extensive) examinations. Table 1 presents the sample size and sampling intensity for key forest management activities. While individual sites were selected to assess a primary activity (e.g. harvesting, site preparation tending, etc.) all associated activities at the site were also assessed. This allowed the audit team to augment the planned sampling intensity.

TABLE 1. IFA FIELD SAMPLING INTENSITY ON THE CARIBOU FOREST

Activity	Total Area (Ha) / Number	Planned Sample Area (Ha)	Actual Area Sampled[3] (Ha)	Number of Sites Visited	Percent[4] Sampled (%)
Harvest	6,219	663	1,457	27	23
Natural Renewal	10,464	1,046	1,100	24	11
Artificial Renewal	5,564	581	1,896	32	34
Site Preparation	5,021	557	1,104	23	22
Tending	220	77	220	7	100
Free-to-Grow	10,681	1,397	1,965	22	18
Specified Procedures Report Sites	3,917	391	603	45	15
Areas of Concern[5]	2,729 km	272 kms	272 kms		10
Water Crossings	207	20		25	12
Road Construction (kms)	536			536	100
Forest Roads and Maintenance Agreement Work	1,009[6] kms	101 kms	1,009 kms		100

One member of the audit team had participated in the field audit of sites for a Forest Stewardship Council (FSC) certification assessment in the week prior to

[3] Not every hectare of the area sampled is surveyed, as this is not feasible.
[4] Percent sampled represents a combination of primary and secondary audit activities inspected on a site.
[5] A significant number of Areas of Concern (AOC) on the Forest are linear features (e.g. riparian areas) as opposed to point features (e.g. nest sites). For this reason the assessment statistics are area and distance based.
[6] Includes construction and maintenance.

the IFA field audit. This added knowledge and recent field experience on the Caribou Forest was beneficial to the IFA investigations.

During the field audit a member of the audit team attended a regular meeting of the LCC to explain the audit process and solicit additional input from LCC members. One LCC representative spent two days in the field with the audit team. Individual interviews were conducted with three of the LCC members, two First Nations persons, three tourism operators, two municipal representatives, and a trapper, logging contractor, private citizen and Sioux Lookout area merchant.

Report: This report provides a description of the audit process and a discussion of our findings and conclusions. Recommendations address deficiencies in forest management and associated processes that require corrective action. Recommendations may be directed at Corporate OMNR, the OMNR District and SFL holder. For this audit recommendations have been directed at the District OMNR and/or SFL holder. These recommendations are to be addressed in a management unit Action Plan. The Action Plan must be submitted for OMNR approval within two months of receipt of the final Audit Report.

A Status Report on the Action Plan must be prepared by the SFL Holder and OMNR District and be submitted for OMNR approval within two years of approval of the Action Plan. Reporting on the status of audit recommendations in the Annual Provincial Action Plan is to be included in Provincial Annual Reports on Forest Management. Status reporting begins two years following the approval of the Action Plan or more frequently as may be required by the Action Plan.

2.2. Forest Management Context

AbitibiBowater manages the Caribou Forest under the authority of Sustainable Forest Licence # 542481. Volume commitments on the unit are held by Buchanan Forest Products Ltd. (harvesting on behalf of McKenzie Forest Products Inc.), Longlac Wood Industries Inc., Ainsworth Lumber Ltd. and Weyerhaeuser Company Limited. AbitibiBowater sought and obtained creditor protection under the Companies Creditors Arrangement Act (CCAA) in April 2009. In March 2009, Buchanan Forest Products Ltd. went into receivership.

Administration for the Forest is provided by the Sioux Lookout District OMNR office, and the AbitibiBowater Sioux Lookout, Ignace and Thunder Bay offices.

The five Aboriginal communities situated in or adjacent to the Caribou Forest include Mishkeegogamang First Nation, Ojibway Nation of Saugeen, and the Slate Falls, Lac Seul and Cat Lake First Nations. The Mishkeegogamang and Saugeen First Nations are most directly involved in Caribou Forest management and issues.

The Caribou Forest is an important contributor to the local economy and mills in Sioux Lookout, Savant Lake, Kenora, Hudson, Ignace, Dryden, and Thunder Bay. Harvesting operations are conducted primarily by contractors on behalf of AbitibiBowater (Highstone Logging, M&M Chipping) and Buchanan Forest Products Ltd (BFPL) for the McKenzie Forest Products sawmill (The McKenzie sawmill in Hudson curtailed operations in 2007).

2.2.1. Map of Management Unit (SFL)

Figure 1 shows the location of the Caribou Forest.

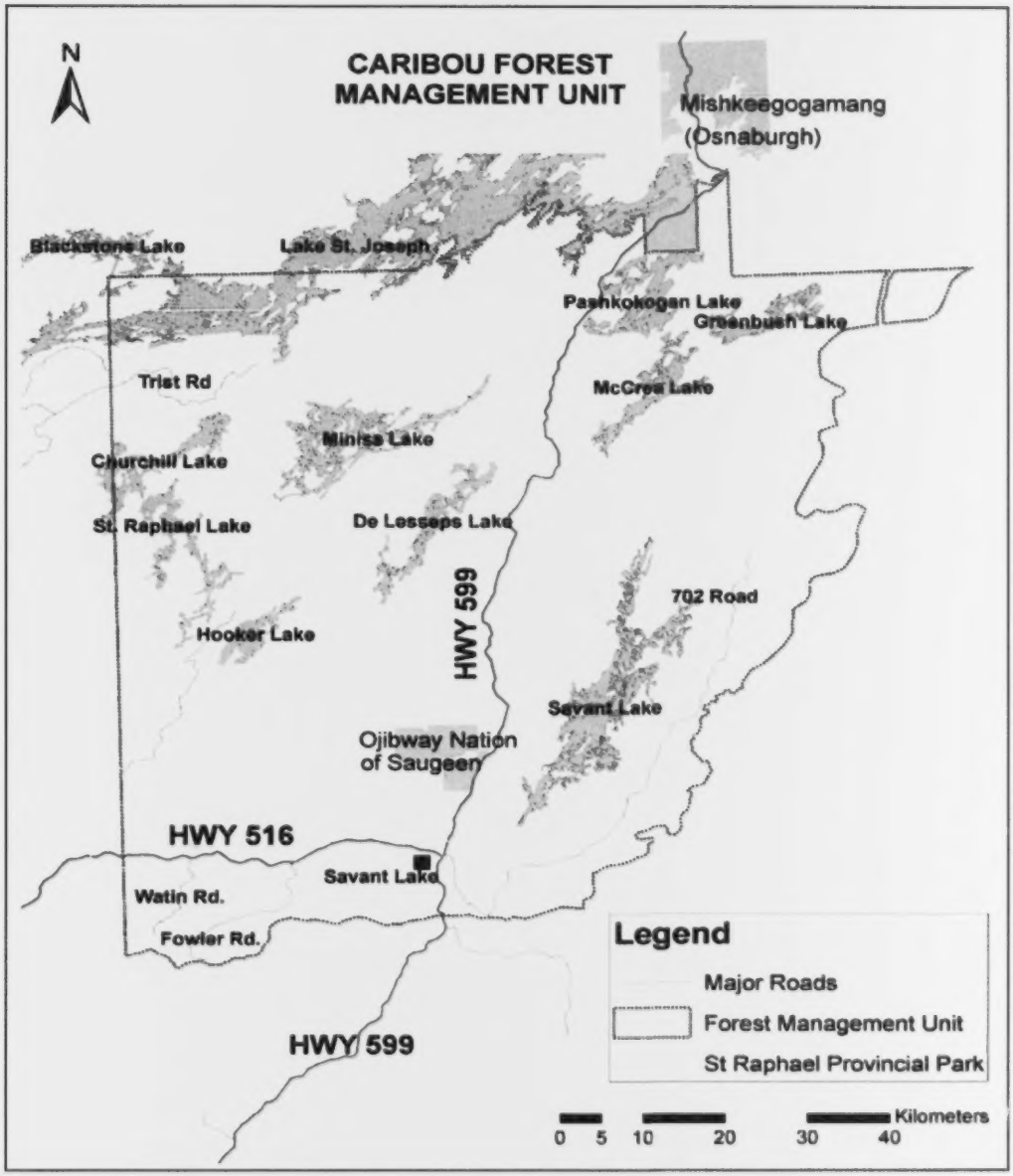

FIGURE 1. MAP OF THE CARIBOU FOREST

2.2.2. Description of the Management Unit

The Caribou Forest is a relatively small SFL. The area of the Forest is 7,180 km^2, which includes 1,326 km^2 of water. Fourteen percent of the total area (11% of the land area) is classed as unmanaged Crown land, most of which consists of the St. Raphael Provincial Park. Approximately 75% of the Crown managed land[7] area is managed Crown production forest[8]. There is a very little patented or other land within the Forest. Most of the federal land is in two First Nation Reserves.

Table 2 and Figure 2 present the area of managed crown land by land type.

TABLE 2. AREA SUMMARY OF MANAGED CROWN LAND BY LAND TYPE

Managed Crown Land Type	**Area (Ha)**
Non-Forested	105,501[9]
Non-Productive Forest	31,841
Protection Forest[10]	13,712
Production Forest[11]	470,280
Forest Stands	399,938
Recent Disturbance	64,149
Below Regeneration Standards[12]	6,193
Total Forested:	**515,833**
Total Crown Managed:	**621,334**

Source: FMP-1 Table: Management Unit Land Summary in Hectares (2008 FMP)

[7] Managed Crown Land includes forested land where forest management activities are permitted, as well as, non-forested areas and protected areas such as islands (Protection Forest) where forestry is not permitted.
[8] Production forest is capable of supporting forest management.
[9] Includes 102,848 ha of water.
[10] Protection forest land is land on which forest management activities cannot normally be practiced without incurring deleterious environmental effects because of obvious physical limitations such as steep slopes and shallow soils over bedrock.
[11] Production forest is land at various stages of growth, with no obvious physical limitations on the ability to practice forest management.
[12] This area is deemed to have low stocking due to site limitations, natural disturbance or past forest operations.

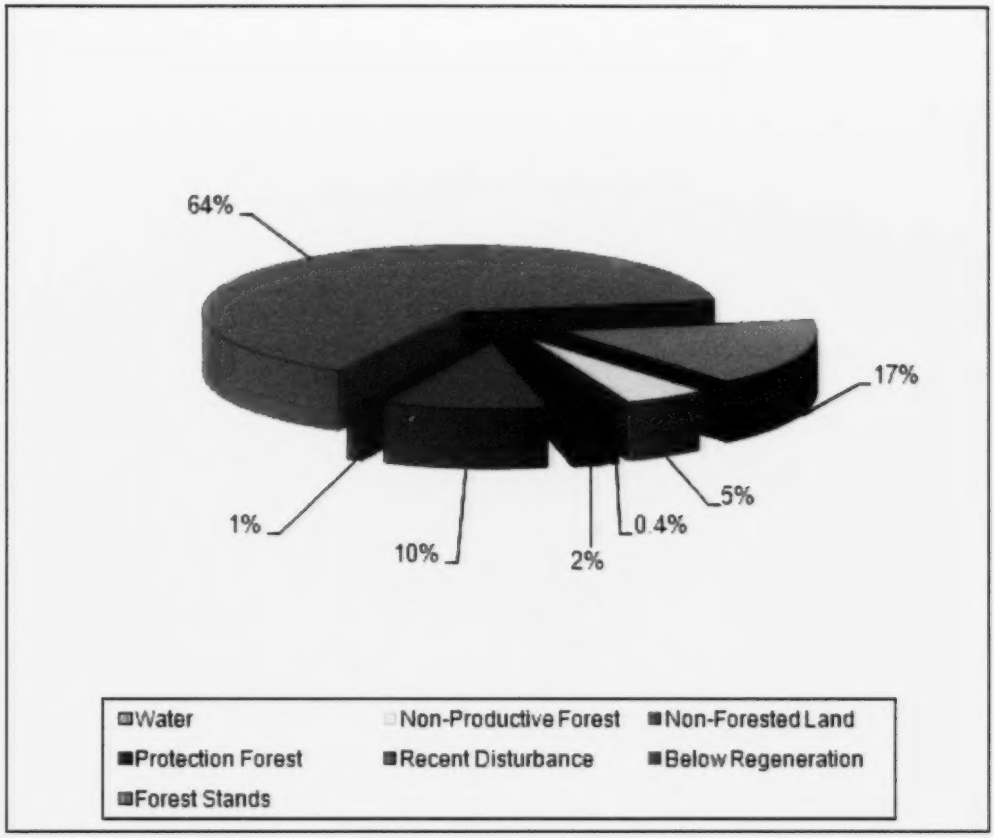

FIGURE 2. AREA SUMMARY OF MANAGED CROWN LAND BY LAND TYPE
Source: FMP-1 Table: Management Unit Land Summary in Hectares (2008 FMP)

The Forest is located within the northern portion of the OMNR Northwest Region. It lies north of the Canadian National (CN) railway line and south of Lake St. Joseph. The Lac Seul Forest borders the unit to the west and Wabakimi Provincial Park is on the east side. The northern border coincides with the edge of the Area of Undertaking.

The community of Savant Lake is situated on the southern border 380 km northwest of Thunder Bay. The town of Sioux Lookout lies approximately 70 km southwest of the unit. The Ojibway Nation of Saugeen is located in the south-central part of the Forest, while the Mishkeegogamang First Nation is located on the northeast border.

Forest cover is dominated by boreal conifer species such as spruce, jack pine and balsam fir. Intolerant hardwoods (poplar and white birch) are also common. White pine and red pine occur in localized areas. Periodic wildfires has lead to the establishment of jack pine on the well-drained uplands and black spruce on the poorly drained lowlands, with most deciduous species occurring near lakeshores and watershed drainages.

Upland spruce sites and lowland spruce forest units occupy 35% and 22% of the productive forest area respectively. Mixed conifer forest units (MC1 & MC2) occur on approximately 25% of the productive forest land base. Stands dominated by jack pine occupy approximately 11% of the forested area. Red and white pine forest types occur infrequently occupying less than 1% of the landscape. Hardwood dominated stands occur less frequently with mixed hardwoods and poplar stands occupying 5% and 2% of the Forest respectively. Figure 3 shows the distribution of forest units by area.

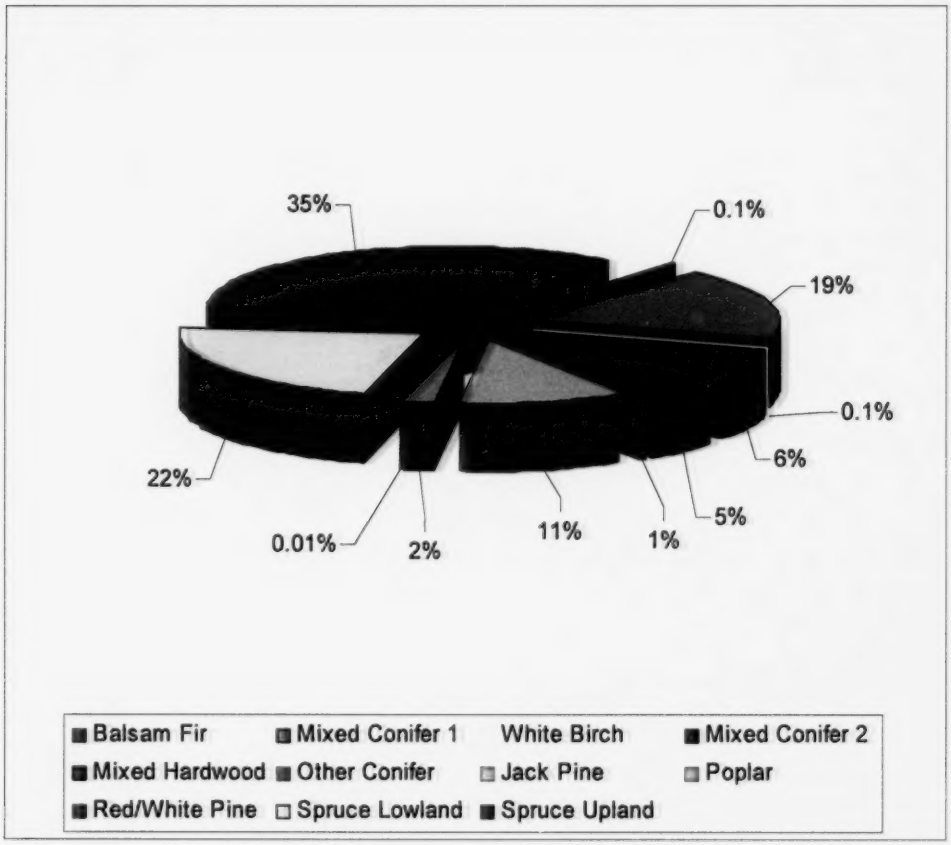

FIGURE 3. PROPORTIONAL REPRESENTATION OF FOREST UNITS
Source: 2008 FMP

Figure 4 shows the broad age class area distribution on the Forest. It is skewed toward mature and old forest reflecting a history of fire suppression and the lack of industrial harvesting prior to the1970's. A considerable area was burned in 1918 which accounts for the significant area in the 61-100 year classification.

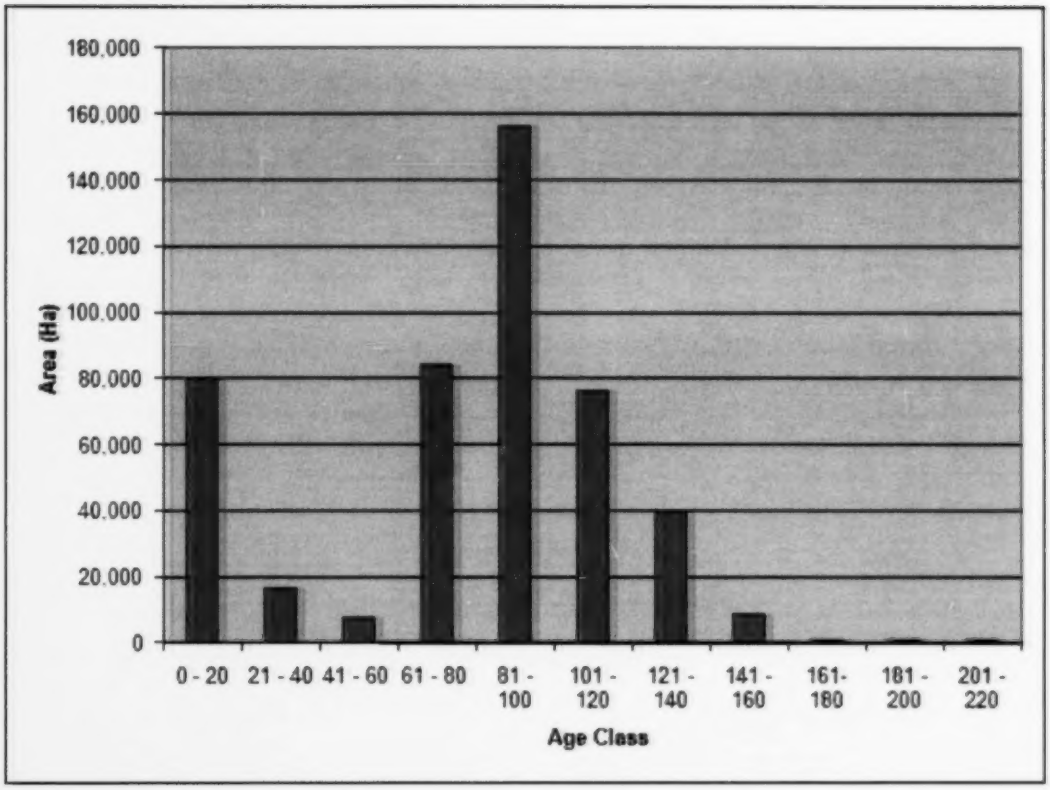

FIGURE 4. AGE CLASS AREA DISTRIBUTION – CROWN MANAGED PRODUCTION FOREST
Source: 2008 FMP

Figure 5 shows the age class area distribution by forest unit. Age class area imbalances exist for forests older than 80 years (particularly SPU, MC1, SPL, and PJ1 forest units) and in stands with ages between 21 and 60 and older than 140 years. This age class area structure has significant forest management implications including;

- A reduced allowable harvest for a 40 year period between 2028 and 2068,
- The potential for declining stand yields and increased fuel loading as stands age and breakup,
- A decline in wildlife habitat associated with older forest cover.

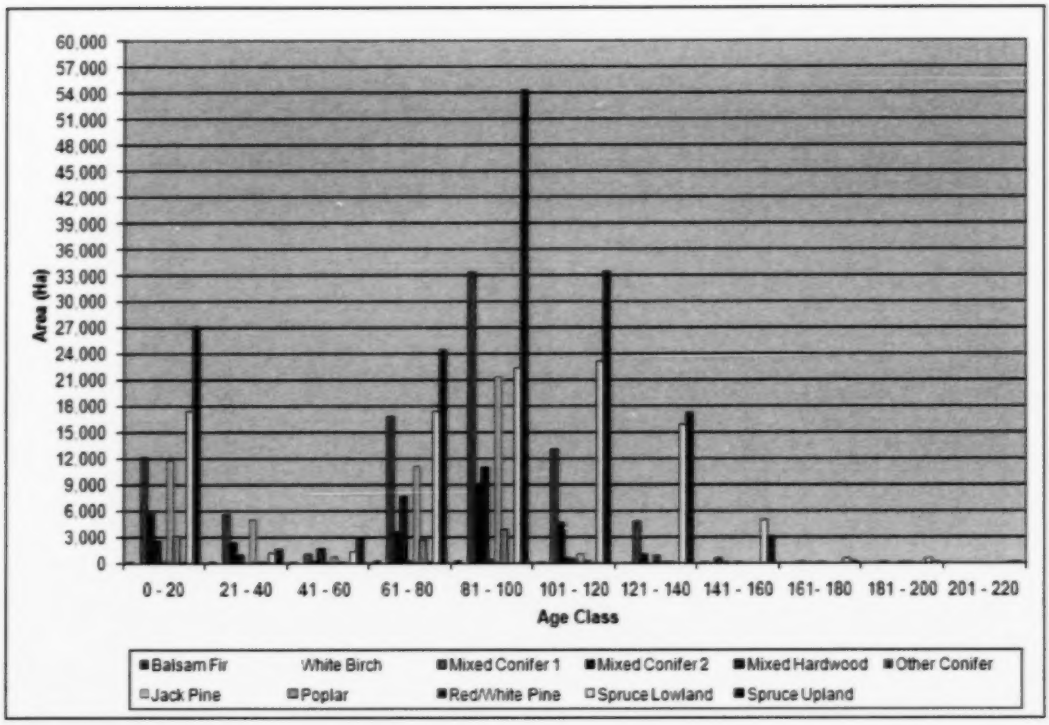

FIGURE 5. AGE CLASS AREA DISTRIBUTION BY FOREST UNIT
Source 2008 FMP

The Forest supports a diversity of boreal wildlife species. The signature species is woodland caribou, which is classed as threatened. [13] In addition to woodland caribou, the Forest provides habitat for other species of concern such as the Wolverine, Great Grey Owl and Bald Eagle. There are large populations of moose and black bear that support a large tourism and recreational hunting industry.

There are seven main base tourism lodges and 16 outpost camps. Key tourism areas include Savant Lake, Lake St. Joseph, St. Raphael Provincial Park, and the Miniss Enhanced Management Area (EMA). Designated tourism lakes include: Armit, Doran, Jabez, Kashawegogama, Lake St. Joseph, Marchington, McCrea, Medcalf, Pashkokogan, Raggedwood, Savant and Little Savant Lakes.

Other commercial opportunities include trapping, baitfish harvesting, wild rice harvesting and a commercial walleye fishery in Lake St. Joseph. Local residents use the Forest extensively for hunting, fishing, snowmobiling, camping, berry-picking and other recreational pursuits.

[13] By the Committee on the Status of Endangered Wildlife in Canada (COSEWIC).

2.2.3. Forest Management Issues

The forest manager identified several forest management issues in the development of the 2008 FMP. The overriding issue was the implementation of the *Forest Management Guidelines for the Conservation of Woodland Caribou* and the associated spatial harvesting pattern (i.e. caribou mosaic). The application of the "Caribou Guidelines" brought with it a number of complex socio-economic and forest management issues that included:

- The provision of long term wood supply and caribou habitat.
- The composition and age class structure of the future forest.
- Access and recreational use of the Forest.
- Trapline access and furbearer management.
- The protection of tourism values.
- The protection of Aboriginal economic opportunities and cultural values.

Other forest management issues included; recreational access associated with the St. Raphael Signature Site, the lack of Aboriginal involvement and participation in the forest management planning process, a trend indicating a decline in wood and caribou habitat supply over time and persistent low levels of wood utilization.

These forest management issues and the implications and impacts of the selected caribou mosaic are discussed in this report.

3.0. SUMMARY OF AUDIT FINDINGS

3.1. Commitment

The auditor may utilize evidence from forest certification audits such as the Forest Stewardship Council (FSC), Sustainable Forestry Initiative (SFI) and the Canadian Standards Association Sustainable Forest Management program (CSA-SFM). Successful certification by one of these audits can satisfy the requirements of the commitment principle contained in the IFAPP. Bowater Thunder Bay Woodlands (which includes the Caribou Forest) was certified under the Sustainable Forestry Initiative in September 2004. It is our assessment that the SFI certification had met the IFAPP commitment principle.

Corporate OMNR has produced a number of strategic directions to deliver on its goals, strategies, and actions. The most recent document is *Our Sustainable Future,* produced in February, 2005. That document contains a long term corporate vision of a "*Healthy environment through sustainable development*" and a mission of "*...ecological sustainability.*" It describes an operating philosophy and contains specific goals including a specific strategy for *"...improved aboriginal relations through economic development opportunities and partnerships".*

Our assessment is that both organizations had successfully delivered on IFAPP commitment requirements.

3.2. Public Consultation and Aboriginal Involvement

The process of sustainable forest management planning, implementation and monitoring must be conducted in an open consultative fashion, with the involvement of the Local Citizens Committee, Aboriginal communities, and other parties with an interest in the operations of the forest management unit. The sections below present our findings on the forest management consultation process for the development of the 2008 FMP.

3.2.1. Local Citizens' Committee

A Local Citizens Committee (LCC) must be established to help the planning team prepare the Forest Management Plan. Membership on the committee is to include local citizens representing a range and balance of community interests.

LCC responsibilities include ensuring the effectiveness of public consultation, assisting with the identification and analysis of management alternatives, participating in the development of values maps, monitoring the implementation

of the plan, and providing advice to the District Manager (DM) on plan amendments and issue resolution. Each Forest Management Plan must contain an LCC general statement of agreement or disagreement with the plan.

The OMNR Sioux Lookout District and the Sioux Lookout LCC have responsibilities for both the Lac Seul and the Caribou Forests. There is a significant workload and LCC members are involved in the full range of activities that occur on both Forests.

The LCC was active during the development of the 2004 FMP, the 2007 Contingency Plan and the 2008 FMP for the Caribou Forest. During that time the LCC reviewed and updated its Terms of Reference to reflect the full range of FMPM activities and responsibilities. The membership included representatives from the various stakeholders including the forest industry, tourism, municipal council, trappers, anglers and hunters, mining, local businesses, local heritage representative and independent citizens. When vacancies occurred there was a determined effort made to enlist a replacement representative.

Numerous efforts had been made to include formal First Nation membership on the LCC with little success. At various times an Aboriginal representative was enlisted (e.g. September, 2008); however, actual participation was limited. Our interviews indicated that the leadership of FN communities, located in the Sioux Lookout District, do not view the LCC as an appropriate forum to participate in as they do not accept the implied status of "stakeholder", and prefer to provide their views through other forums and/or place higher priority on other community initiatives.

For the 2002 FMP and 2007 Contingency Plan the LCC was actively involved in monitoring and providing advice on the implementation of the plans including the review of Annual Reports, Annual Work Schedules, amendments, compliance issues and silviculture programs. The District Manager included the LCC in the issue resolution process for the development of the 2008 FMP.

During the early portion of the audit period (2004 – 2005) the LCC had a number of internal problems that hindered its effective operation. A previous IFA of the Lac Seul Forest[14] identified a number of concerns with the LCC operation and it was clear from our audit that the District Manager and LCC members responded positively to those audit recommendations. During the 2007 – 2009 period the LCC conducted an internal "effectiveness survey" and reviewed its membership. Most importantly, the roles and responsibilities of the LCC vis-à-vis the District Manager were clarified and confirmed. The minutes for the last three years (2007 – 2009) reflect a changing and increasingly effective committee with a clear and integrated focus on its role and responsibilities. Meeting quorums were usually attained, and a free exchange of questions, information and opinions are evident.

[14] Arbex Forest Resource Consultants Ltd. Lac Seul Independent Forest Audit 2001-2006.

For the development of the 2008 FMP the LCC membership was reviewed and Aboriginal communities were once again invited to nominate a representative. The Terms of Reference was reviewed prior to the start of the planning process. A representative served on the planning team. The meeting minutes indicate that the Committee participated in the full range of planning activities including participation in the development of the desired forest and benefits, the identification and analysis of management objectives and alternatives, review of values maps, and participation in the information centers. The LCC received the list of required alterations from the draft Forest Management Plan review.

A review of minutes and interviews with LCC, OMNR and SFL staff indicated that the Committee operated on a consensus basis. Individual members indicated to us that AbitibiBowater and OMNR staff were respectful and responsive to member's questions, concerns and requests for information. Training was available for members and funding levels were appropriate for the committee to carry out its duties.

Interviews with the Acting LCC Chairperson, individual members and the District Manager (also serving as the OMNR LCC representative) revealed a general consensus that the LCC was effective in bringing community and specific stakeholder interests to forest planning and forest operations decisions. The members share a collective passion to have an influence on forest management.

The LCC statement of agreement with the 2008 FMP indicates it was involved in the planning for the Forest "*... but would prefer to even increase their involvement, in order to ensure that our forests are harvested in an efficient and sustainable fashion.*" The statement concludes with, "*The LCC membership supports the Caribou 2008-2018 Forest Management Plan.*"

Our assessment is that the LCC has responded positively to previous IFA recommendations, has refocused itself, and is a positive force in sustainable forest management on the Caribou Forest. Our opinion, based on experiences in this and many other IFA's, is that LCCs usually function more effectively with the direct involvement of the OMNR District Manager. We commend the LCC members and the District Manager for their efforts.

3.2.2. FMP Standard Public Consultation Process

We conducted an overview of the public consultation process associated with the development of the 2008 FMP and found that it complied with 2004 FMPM requirements. Public notices were issued with sufficient lead time, their contents were complete and an appropriate mix of communications media was utilized. Material presented at the information centres met prescribed standards; a list of required alterations was available to the public during the public review of the Draft Plan. Environmental Registry notices were issued as required. Interviews with local residents, tourism representatives and a review of the correspondence

file indicated that clients were aware of the planning process and that they were given adequate opportunity to participate.

3.2.3. Issue Resolution

Opportunities for accessing the issue resolution process were clearly identified in public notices and related correspondence.

Four issue resolution processes were undertaken during the 2008 FMP planning period, and all the required procedures were followed. One issue was resolved at the District Manager's stage and three were resolved at the OMNR Regional Director's Stage. FMPM timelines and content for the issue resolution processes were met. As a result of the issue resolution process some changes were made to the 2007 Contingency Plan and the 2008 FMP.

We note that the resolution of the issues, while not entirely satisfactory to the clients in all cases, was characterized by considerable effort by OMNR staff, LCC members, the Plan Author and the company in working toward a resolution. Our assessment is that these efforts were primarily responsible for the fact that none of the issues proceeded to the Individual Environmental Assessment (IEA) stage.

3.2.4. Individual Environmental Assessments

Public notices and related correspondence clearly identified the opportunity for members of the public to request the Minister of Environment to designate that "*specific proposed forest management activities*" undergo an IEA. No IEA requests were made during the preparation of the 2007 Contingency Plan or the 2008 FMP.

3.2.5. Aboriginal Involvement in Forest Management Planning

The Mishkeegogamang First Nation and the Ojibway Nation of the Saugeen First Nation are the two First Nations that are affected by forest management activities on the Caribou Forest. Both Bands were offered the option of the Forest Management Native Consultation Program (FMNCP), or the standard consultation program with respect to forest management planning. The Mishkeegogamang community opted for the standard program. The Saugeen FN took the position that it did not recognize the OMNR FMP process as legitimate and would not participate in it. Our invitations to the Saugeen FN (written and verbal) to participate in the IFA audit had the same result.

The OMNR fully met all notification and background information requirements for both First Nations. These included;

- Invitations for participation on the LCC, Planning Teams and offers of community involvement were extended.

- Values collection funding was provided, projects were initiated, reports prepared and sent to the communities.
- Background Information Reports were prepared and circulated.
- Notices of FMP public consultation opportunities were sent.
- Offers to meet and discuss the planning process, draft and final plans were extended.
- Limited demographic profiles were completed for each community based on federal government information.

The Mishkeegogamang First Nation was involved and active in the forest management planning process. During the preparation of the 2002, 2007 and 2008 FMPs a community representative participated, to some extent, on the planning teams. During development of the 2008 FMP the member on the planning team resigned and the community did not select a replacement representative. We were unable to determine why he resigned or why there was no replacement. Nevertheless, the planning team continued to seek and to receive the community's continued input for the development of the plan. The community assisted, to some extent, with the collection of values information and preparation of the Background Reports for the 2002, 2007 and 2008 plans.

The Saugeen First Nation decided not to participate in the 2008 planning process. It did enter into an agreement with the OMNR for the collection of values information for the 2002 FMP; however, the FN was reluctant to share the results in a significant way and the OMNR ended up preparing the maps and reports based on available historical data and information it collected from working in the vicinity of the community. The OMNR used available values information and prepared the Background Reports for the 2007 and 2008 FMPs.

AbitibiBowater has made significant efforts and accommodations to maintain an ongoing dialogue with both First Nation communities. For example, Bowater and Mishkeegogamang negotiated a Memorandum of Understanding in 2005 outlining a negotiation framework intended to reconcile their respective concerns with forestry operations on the Caribou Forest. Discussions were suspended in 2006 to allow the community time to develop their positions. Discussions were reinitiated in 2008 and are ongoing. AbitibiBowater and the OMNR have treated First Nation concerns seriously as evidenced by suspended herbicide applications in select areas of the Forest, as well as suspended primary road construction (Dole Valley primary road).

AbitibiBowater has also demonstrated efforts to engage First Nation members in forest management. For example, the Company has developed, sponsored and facilitated an award winning (Megwewkob Magazine) First Nation Ranger Program. Different harvesting contracts have been offered to both the Saugeen and Mishkeegogamang communities and several training programs for interested

community members were initiated and funded (e.g. silviculture, heavy equipment operation).

OMNR District Managers are also required to conduct negotiations with Aboriginal peoples to identify and implement ways of achieving more equal participation in the benefits provided through forest management planning. The OMNR Districts are assisted with a formal Condition 34 Toolkit that is intended to be used by OMNR staff as well as by Aboriginal communities to; "*...enable better awareness of Condition 34*[15]*...*"and to be "*helpful in working with the MNR on Condition 34...*" Progress is recorded annually in a *MNR District Report for Forest Management Class EA Condition 34*. We reviewed the completed Condition 34 forms at the District Office and determined they conformed to all reporting requirements. However, our review and discussions with OMNR and Company staff indicated that Mishkeegogamang and Saugeen involvement in forest management operations continues to be limited, despite considerable effort by both the Company and the OMNR.

The Saugeen First Nation has formally removed itself from the planning process and response to OMNR/Company initiatives continues to be limited. We had no success involving the community in the IFA process. We were informed that the community leadership does not accept Ontario jurisdiction in a number of areas, including forest management planning. We were informed that while the invitations for involvement were rejected, Saugeen community leaders did attend open houses for the 2007 and 2008 plans. The FN does have an informal, if limited, level of communication with both the Company and OMNR. It has participated in some Company training and employment initiatives and OMNR field staff exchange information with respect to wildlife and fisheries initiatives.

We interviewed members of the Mishkeegogamang First Nation, the OMNR Aboriginal liaison person, the District Manager and Company staff. There is a consensus that a relatively positive relationship does exist between the parties. Ongoing communications and information sharing occurs and a number of initiatives related to information sharing, training, and employment have produced positive but somewhat limited results. We were informed that some of the basic reasons for the limited results included;

- First Nation capacity to respond knowledgably and in a timely manner to forestry issues and proposals is lacking.
- First Nation consensus on how, when and to what extent forest operations should proceed is difficult to obtain due to different internal perspectives on protection vis-à-vis economic development.

[15] Condition 34 from the 2003 Class Environmental Assessment requires MNR District Managers to conduct negotiations with Aboriginal peoples to identify and implement ways of achieving more equal participation in the benefits provided through forest management planning.

- Evolving First Nation political positions with respect to asserted authority over Ontario crown lands are, at times, linked to community involvement in forest management planning.

Our overall assessment is that the OMNR and Company have fully met their obligations with respect Aboriginal involvement in the 2007 and 2008 planning processes. Within the realities of First Nation capacity and interest the Company has done a good job of encouraging/initiating processes to involve the Mishkeegogamang and Saugeen First Nations in forest operations, and the OMNR District Manager has met Condition 34 obligations.

3.2.6. Annual Operations Public Inspection and/or Consultation

The FMP Annual Work Schedule (AWS) is produced every year to guide the implementation of operations. It lists operations which are approved in the FMP and are scheduled for implementation that year. The LCC and the public must be given an opportunity to review the AWS.

All AWS's were reviewed by OMNR district staff and by the LCC. All 1996 FMPM and 2004 FMPM content and timing requirements for public Notices of Inspection of the approved AWS, and prescribed burns were met. Mining Companies were notified of the planned AWS activities.

The 2007 Contingency Plan met 2004 FMPM requirements for public notice and consultation including consultation with the LCC and the completion of two public information centres.

3.3. Forest Management Planning

3.3.1. Plan Author, Planning Team, Chair and Advisor Activities

The FMPM requires that the District Manager appoint the Chair of the planning team. The Plan Author must be a Registered Professional Forester (R.P.F.) and the planning team must represent a wide range of natural resource expertise. A Terms of Reference must be developed by the Plan Author and approved by the OMNR District Manager and the Regional Director (RD). It must identify the tasks required for the preparation of the plan and identify the responsibilities of planning team members. A detailed timeline must be established. Planning team members must be available to answer questions from the public.

The Plan Author was a consultant and a R.P.F. Company staff on the planning team included: an area supervisor, planning forester, silviculture forester, forestry superintendent and a FMP assistant. OMNR staff on the team included: an area technician, area forester, area biologist, area supervisor, planning analyst and a

First Nations liaison person. There was a LCC representative, a First Nations representative and a representative of the overlapping licencee.

Other areas of expertise required for planning (e.g. parks, lands administration, and cultural heritage) were provided by a support team and an extensive list of plan advisors drawn from the OMNR, Company staff and other Ontario Ministries. A Terms of Reference (TOR) which met FMPM requirements was approved by the District Manager and the Regional Director.

A seven member OMNR/Company Steering Committee chaired by the OMNR District Manager was established.

A review of the planning team minutes and interviews with team members, the OMNR District Manager and the AbitibiBowater Forestry Superintendent demonstrated that the planning team had very good attendance and operated effectively. Planning efficiency was enhanced with the creation of seven "task teams" which addressed specific issues and reported back to the planning team. Throughout the process, the OMNR delivered the required background information and support to the planning team. The planning team met frequently (28 meetings between May 2005 and November 2007), agendas were comprehensive and minutes were timely and well written. Our interviews and observations revealed strong evidence of a good working relationship between AbitibiBowater staff, OMNR staff and the LCC representative.

The 2004 FMPM requires that the Regional Director approve the planning teams Terms of Reference prior to issuing the first public notice of the formal public consultation process. The Terms of Reference were approved on December 8, 2006, well after the public consultation had begun. While we have no concerns about the efficient functioning of the planning team, delay in approval was cited as one of the reasons for the having to produce the 2007 Contingency Plan and steps need to be taken to avoid approval delay in the future.

We were initially concerned about a high rate of "turnover" of planning team membership. During the planning process, 24 people served on the planning team and 11 (46%) of those were not on the team for the duration of planning. Normal attrition and recruitment, parental leaves, and some structural re-alignment of duties in OMNR were cited as reasons. Planning team and steering committee members felt that this turnover rate did not affect planning team efficiency due to staff overlap during the changes and the fact that many of the staff who left were available to advise their replacements.

The First Nations member of the planning team resigned early in the process and attempts to recruit another First Nations member were not successful. We note that planning team minutes continued to be sent to the First Nation.

The 2008 FMP was approved by the Regional Director on December 17 2007, approximately 6 weeks later than had been anticipated in the Terms of Reference. This delay was mostly due to the completion on the Issue Resolution Process and had no effect on plan implementation dates.

A 10% sample of the correspondence file (i.e. phone calls, letters, emails, Information Centre comment sheets) was reviewed to determine if inquiries were responded to in a timely manner. The review indicated that an effective tracking system was in place, correspondence was well documented and response times were acceptable.

3.3.2. Introduction

The FMP introduction contained a properly prepared and signed statement of how the OMNR's Statement of Environmental Values (SEV) under the Environmental Bill of Rights was considered in the preparation of the Plan. As required, an index to the environmental assessment components of the plan was included, and a SEV Briefing Note was prepared and signed in accordance with OMNR requirements.

3.3.3. Management Unit Description

The FMP management unit description provides information and context for the development of the plans strategic direction. The description of the Forest in the 2008 FMP met FMPM requirements and provided the necessary context for forest management planning and decision making. Information was provided on the administration, geology, current and historic forest condition, management unit history and other natural resources present on the Forest. Tables in the text adhered to FMPM formats.

The forest management implications of the unit's geology and soils were described and integrated in the Silvicultural Ground Rules. The ecosite classification system[16] developed for the OMNR Northwestern Region reflects the correlation between soil type, soil depth and vegetative cover. Those ecosite characteristics were used as the basis to predict harvest yields and forest unit composition following silvicultural treatment.

Baseline socio-economic profiles were produced for the 2008 FMP using 2001 Canada Census data. These profiles included a description of demographics and migration, the economic environment, industrial/commercial and non-

[16] The OMNR Northwestern Region uses vegetation and soil information to classify forest communities into Ecosite Types that identify groupings of vegetation on specific ranges of soil conditions. This information is used in forest management planning to develop management prescriptions for timber harvest and renewal; it is also used in the determination of preferred habitat for wildlife.

industrial uses of the forest. This information was used as the basis of the socio-economic analysis of management alternatives.

Adequate demographic and socioeconomic profiles were available for principal municipalities associated with the Forest; however, as noted in the FMP, there was no current employment data for the Mishkeegogamang or Saugeen First Nations.

Complete forest industry information was included in the FMP. Other industrial and non-industrial information was included, but not in the detail provided for forestry. Additional economic information was gathered for other FMP purposes such as the negotiation of Resource Stewardship Agreements. AbitibiBowater did express a concern about the lack of current verifiable data on the remote tourism industry and the potential for inaccurate information to constrain forest operations.

Notwithstanding shortfall in some of the First Nations census information, we feel that the information requirements of the 2004 FMPM were met and provided the appropriate context for forest management planning decisions.

3.3.4. Long Term Management Direction

The development of a long-term management direction for the Forest is required to provide direction for the levels of access, harvest, renewal and tending activities needed to achieve the desired forest and benefits. Development of the long-term management direction includes the identification of management objectives and the use of analytical methodologies, models and tools regarding forest regulation, social and economic assessment, wildlife habitat supply and landscape management.

Long-term management direction development is an iterative process. The desired benefit levels and forest management approaches are modified in response to preliminary and subsequent analyses undertaken during the development of the long-term management direction. The long-term management direction must be consistent with legislation, policy and direction in forest management guides, must balance social, economic and environmental considerations, and must provide for the sustainability of the management unit's Crown forest.

A management strategy is to be developed that balances the achievement of management objectives over time. The level of forest harvest for every forest unit on the Forest must be established for the ten-year period of the forest management plan. The process defined by the FMPM for the development of a long-term management direction was followed in the creation of the 2008 FMP.

The planning team, with the assistance of the LCC:

- identified current forest condition, relevant forest units, and wildlife habitat classifications,
- developed base models for wood supply and habitat analysis, examined modeling assumptions and management considerations,
- undertook a "scoping analysis" to identify and assess a range of management possibilities with related objectives and targets,
- identified a proposed management strategy including defining a desired forest, a balance of benefits and objectives, an assessment of these for sustainability, and identification of appropriate harvest areas and road corridors,
- consulted with the public on the proposed long-term management direction leading to its endorsement.

Management for caribou resulted in the creation of a "caribou mosaic" which covers the entire Forest. In the mosaic, large "blocks" available for harvest within a 20 year period are identified. (i.e. "A" blocks for 1998-2017; "B" blocks for 2018-2037, etc.). Three draft caribou mosaics and their variations were developed for modeling and further assessment. These were compared to the mosaic developed for the 2002 FMP. Two were based on a minimum block size of 15,000 ha and the third was based on a minimum block size of 20,000 ha. Of the two mosaics based on 15,000 ha, Option 1 had a rotation period of 100 years which is generally the standard applied in the northwest region. Option 2 was based on a total rotation age of 120 years to investigate the effect that longer rotations would have on caribou habitat supply as well as wood supply over time. Option 3 was based on a minimum block size of 20,000 ha with a rotation age of 100 years.

Scoping analyses were performed to understand the effects of each mosaic on wood supply and habitat. Option 1 was determined to represent the best possible means of balancing caribou habitat requirements with forest industry requirements, while deferring harvest in areas of importance to the Mishkeegogamang First Nation. An analysis to investigate objective achievement was completed for Mosaic Option 1.

The wood supply analysis and calculation of harvest rates was undertaken with the Sustainable Forest Management Model (SFMM). The model is the currently approved standard used to estimate the available harvest area (AHA), execute tests of sustainability and determine the range of variation of forest composition and structure. SFMM calculations were performed in accordance with the requirements of the FMPM. In addition to SFMM, the FMP Planning Team also utilized analytical models and tools to:

- determine areas of archaeological potential,

- assess the effect of various management scenarios on marten habitat and vegetation patterns at the landscape level,
- assist in applying the forest management guidelines for the conservation of Woodland Caribou,
- understand the effect of natural disturbances on the forest.

The caribou mosaic had an over-riding influence on the modeling results for the Caribou Forest. Varying SFMM model inputs did not result in increases in volume or harvest areas because the model was already achieving the maximum allowable cut within the bounds of the caribou mosaic.

Evaluation of the Proposed Long-term Management Direction

The requirement to implement the caribou mosaic had a dominant effect upon management objectives and strategies. Silviculture and harvest strategies were constrained by the mosaic pattern selected for implementation. Because of this, different levels of silviculture investment produced no increase in the flow of benefits such as wildlife habitat and harvest volumes. The effects of setting different objectives such as maximizing caribou winter habitat or maximizing wood flow produced unsuitable socio-economic or environmental trade-offs.

Most assumptions used to develop the SFMM inputs for land base definition, forest dynamics and silvicultural options were reasonable and were based on the best available information. However, we did find that documentation of the rationale for the proposed management strategy, the descriptions of the natural benchmark scenario and the various scoping investigations was rather limited in both the FMP text and the Analysis Package. This limited discussion of model inputs, and the sometimes cursory analysis of model outcomes, often made it unclear to the audit team as to how and why decisions and conclusions with respect to final model inputs (e.g. for the use of 70 year fire cycle, percent land conversions and the average area of Caribou A blocks (compared to the average area of other blocks)) were made.

For example, the fire cycle selected in modeling influences the forest landscape pattern (distribution of different aged patches across the landscape). The use of a shorter fire cycle tends to result in a wider acceptable range for the provision of wildlife habitat; this could have forest sustainability impacts with respect to the long term provision of adequate habitat (including caribou wintering areas) and the meeting of other plan objectives as they relate to species composition, old growth, etc. AbitibiBowater adopted a 70 year fire cycle for the natural benchmark SFMM run. Documentation of the rationale for use of the 70 year fire cycle was limited and a more complete discussion would have aided reader understanding. When questioned why a longer fire cycle was not adopted, AbitibiBowater staff indicated that the use of a longer fire cycle would have had negative implications with respect to the provision of caribou habitat, and that the

selected fire cycle (70 years) is within the estimated fire cycle range for the Caribou Forest[17]. During the preparation of this report we had further discussions on the issue of fire cycle and its effects on wildlife habitat supply with OMNR specialists. We concluded that the approach adopted by the planning team was reasonable.

We also noted that the long-term management direction forecasts that 2% of the spruce upland forest unit will revert to roads or landings during terms 1-7; however no other forest units are expected to have land conversions. No rationale was provided to indicate why no other land conversions were projected for other forest units.

The last IFA audit identified concerns related to the potential socio-economic impacts to trappers and declines in long-term caribou habitat and wood supply associated with the implementation of the caribou mosaic strategy in the 2002 FMP. The 2008 FMP also projects declines in harvest levels and habitat over time and a decline in older forest cover and associated habitat types.

Future wood supply is significantly lower over the next 100 years in the available operating areas in Caribou B, C, D, E and F blocks. Available harvest area and yields are higher in Caribou blocks A and AE than in the other blocks, resulting in higher volume for the first 10 year Term (519,000 m^3/yr of SPF versus 341,000 m^3/yr in the second 10 year term). This lower volume remains for 80 years before increasing in 10 year Terms 10 to 12 (see Tables 3 & 4). The FMP indicates that these declines are a result of the current forest condition which is older than that which would occur without fire suppression. The natural benchmark (no harvest) scenario also projects declines as old forests break up and regenerate to younger forests.

[17] Estimates of Eco-regional Forest Composition Derived Using Modeled Bounds of Natural Variation in Northwestern Ontario. (NWSI Technical Report TR-136).

TABLE 3. SUMMARY OF CARIBOU BLOCK AVAILABLE AREA (HA)

Forest Unit	Block A	Block AE	Block B	Block C	Block D	Block E	Block F
Planned Harvest Term	2008-2017	2008-2017	2018-2037	2038-2057	2058-2077	2078-2097	2098-2117
Total Available Area (Ha)	98,962	11,271	73,170	78,581	84,244	72,977	12,749

TABLE 4. SUMMARY OF CARIBOU MOSAIC BLOCK AVERAGE HARVEST VOLUMES BY 10 YEAR TERM

Ten Year Term	Average Harvest Volume (m^3/year)
1	611,000
2	401,000
3	393,000
4	387,000
5	365,000
6	385,000
7	368,000
8	351,000
9	351,000
10	614,000
11	593,000
12	470,000
13	376,000
14	460,000
15	433,000

With respect to the provision of a balanced wood supply, the 2008 FMP indicates that:

- The larger A and AE block areas are required to achieve Term 1 harvest volume targets and capture volume losses associated with older age cohorts.
- No increase in volume or harvest areas could be achieved through increased silviculture expenditures, volume targets or objective functions, because the model was already achieving the maximum allowable cut within the bounds of the caribou mosaic.
- The mosaic strategy will be re-visited during the development of the next FMP.

Although OMNR policy does not dictate an even-flow harvest objective the high Term 1 volume targets compared to later terms was somewhat puzzling to the audit team especially since allocated volumes have never been fully harvested in the past.

A better balance of the size of areas (and therefore volumes) allocated for harvesting would help even out available wood over time. Caribou "A" blocks which are allocated for harvest to 2017 are significantly larger than other blocks (43% more area). The "A" blocks also contain significantly more productive upland conifer, and are closer to peak yields (since they are younger) than harvest stands within other blocks scheduled for cutting in subsequent terms

It is expected that the mosaic strategy will continue to be revised to address issues related to economic wood supply, the under-utilization of the available harvest area (and volumes), land use designations associated with the protection of First Nations and tourism values, and emerging requirements related to caribou range management (i.e. Endangered Species Act). For these reasons, we do not provide a recommendation related to the design of the caribou mosaic.

However, it is our opinion that future forest management plans and support documents (i.e. Analysis Package) need to more fully document the rationale for model inputs to assist the understanding of how and why decisions were made. To address this issue we provide the following recommendations:

Recommendation # 1:

AbitibiBowater should ensure that the natural benchmark run and bounds of natural variation are clearly defined and documented in the next FMP.

Recommendation # 2:

AbitibiBowater should ensure that the FMP text and Analysis Package clearly documents the methodology and rationale for all modeling inputs in the next FMP.

3.3.5. Operational Planning

Operational planning selects areas for harvest, tending, and renewal operations for the five-year term of the forest management plan. Preferred silvicultural treatment packages and the silvicultural ground rules are identified and prescriptions to protect specific values are developed through Area of Concern (AOC) planning. Locations of new primary and secondary road corridors are determined.

The preferred silvicultural treatment packages in the silvicultural ground rules (SGRs) served as the preliminary prescriptions for harvest, renewal and tending operations.[18] The only exception to the SGRs was the use of full tree logging on Ecosites (ES) 11 and 12 where the total soil depth is less than 20 cm (Section 3.6.5). The Silvicultural Treatment Packages (STPs)[19] were appropriate for forest types and included the silvicultural system, the harvest method, renewal, tending treatment and regeneration standards and targets.

The application of the caribou mosaic, more than any other factor, determines whether the desired forest and benefits can be achieved over time. Caribou conservation (as per the caribou guide) is a major element of the plan and defers timber harvests beyond the rotation age that might otherwise be utilized if timber production was the sole objective. The other key component of the caribou strategy is the organization of harvest areas into large contiguous blocks. The 2008 FMP caribou mosaic is a re-design of the 2002 caribou mosaic in an attempt to achieve a more effective caribou habitat configuration. Elements of the 2008 FMP mosaic included;

- cutting and deferring larger blocks,
- protecting key calving lakes,
- providing linkages to habitat concentrations,

[18] The Silvicultural Ground Rules (SGRs) were developed according to the Silvicultural Guide to Managing for Black Spruce, Jack Pine and Aspen on Boreal Ecosites in Ontario.

[19] Silvicultural Ground Rules (SGRs) specify the silvicultural systems and types of harvest, renewal and tending treatments that are available to manage forest cover and the type of forest that is expected to develop over time. A silvicultural treatment package (STP) is the path of silviculture treatments from the current forest condition to the future forest condition; STPs include the silvicultural system, harvest and logging method(s), renewal treatments, tending treatments, and regeneration standards.

- ensuring that forest renewal practices perpetuate dominant conifer composition and decrease hardwood composition.

The caribou guidelines consider stand ages of greater than 60 years as old. Caribou are dependent on lichen as a food source and "moss" can begin to replace lichen on some sites after 100 years. A 100 year rotation cycle was adopted. This cycle appears to be a reasonable choice, as the shorter rotation cycle also improves wood supply (compared to 120 year cycle).

The identification of eligible areas for harvest was guided by the implementation of the caribou mosaic. The selection was also influenced by Areas of Concern (AOC) and the requirement to balance forest units and age classes with the SFMM projections.

Management prescriptions for all AOCs were presented in the FMP and AOCs and were identified on operational maps.

Forecasted renewal activities supported plan objectives and planned treatments corresponded with the silvicultural ground rules. A blend of silvicultural intensities was proposed to meet the objective of maintaining conifer dominance on the Forest. Operationally, there was less dependence on intensive silviculture (i.e. planting) in the FMP than forecast in the SFMM. This difference was attributed to changes in allocated areas where less intensive silviculture was planned and there were carry-over treatments on areas harvested in earlier plan terms.

Plan forecasts of revenues and expenditures accurately reflected proposed operations and, in our opinion, were supportive of the management strategy. Projected expenditures were ~ $3 M less than projected Forest Renewal Trust Funds (FRTF) contributions.

Every FMP must include a statement confirming a commitment to maintain the viability of the tourism industry and where remoteness is identified as a value maintain a similar level (of remoteness) as recognized in the *Tourism and Forestry Industry Memorandum of Understanding* (MOU). Every reasonable effort must be made to pursue the development of Resource Stewardship Agreements (RSA). RSA provisions that directly affect the FMP must be incorporated into it.

During the 2008 FMP planning process, all 33 licenced tourism establishments on the Forest were approached, and 24 declared an interest in developing RSAs. No outfitters entered a formal RSA with the Company; however, 11 signed a more simple form of agreement ("Letter of Understanding") designed by AbitibiBowater. The FMP includes 16 negotiated AOC prescriptions for resource-based tourism values.

From our review of documents, discussions with AbitibiBowater and OMNR staff, and interviews with tourism operators, we find the following:

- The FMP objectives and related strategies confirm a commitment to maintain the viability of the tourism industry.
- OMNR provided updated tourism values mapping.
- Tourism operators were well informed by the OMNR and AbitibiBowater about the opportunity to access the RSA Process.
- Operators felt that reasonable measures had been taken to protect their values.

We conclude that resource-based tourism values were appropriately addressed through the FMP process and that all FMPM requirements for operational planning were met.

3.3.6. FMP Submission, OMNR Plan Review and Approval

The FMPM requires that the draft FMP be submitted for OMNR and public review, and a preliminary list of alterations required by the OMNR must also be made available to the public. Subsequently, a final list of alterations incorporating public review must be addressed before the plan is approved by the OMNR.

The draft and final plan must be certified by the Plan Author, and the final plan must be certified by the OMNR District Manager and approved by the OMNR Regional Director.

The planning process substantially met all milestone dates identified in its Terms of Reference. Final approval of the FMP was approximately 6 weeks late due to the accommodation of changes resulting from issue resolution. All certification requirements were met.

Prior to public review of the draft Plan, an OMNR review identified approximately 200 required alterations to the draft FMP. This number falls at the very low end of the range (usually more that 500) that we normally encounter in our Forest audits.

We undertook a general overview of all the preliminary alterations and a more detailed review of 10% of them. Virtually all of the alterations required changes to text, tables or maps. There was no overlap in required alterations among reviewers and there were fewer than 10 final alterations required to the plan. The low number and quality of required alterations reflects well on the planning process including the involvement of planning team members and advisors during plan development.

3.3.7. Contingency Plans

A Contingency Plan was prepared for the year 2007/2008. The one year plan was required due to setbacks in the submission, review and approval of the planning inventory, selection of planning team members and endorsement of the long term management direction.

We report on our findings relative to the Contingency Plan implementation under the relevant IFAPP Criteria throughout the rest of this audit report.

3.3.8. FMP or Contingency Plan Amendments

Plan amendments for the audit period included:

- For the last three years of the 2002 FMP there were 49 amendments requested (47 administrative, 2 minor) and 37 were approved.
- For the 2007/2008 Contingency Plan there were 12 amendments requested (all administrative) and 11 were approved.
- For the 2008 FMP there were 18 amendments requested and 16 were approved.

Amendments were related to roads and crossings (37), harvest block changes (15), Areas of Concern (14) and renewal and tending (12)[20]. This ratio of amendments is reasonable, in keeping with the expectation of finding new values and making adjustments to accommodate them during plan implementation. Documentation was complete and 1996 and 2004 FMPM procedural requirements were met.

We noted a major shift in the quality of amendment requests and efficiency in processing them between the first two years (2004/05 and 2005/06) and the last three years (2006/07, 2007/08 and 2008/09) of the audit period. In the first two years the time from submission to approval/denial averaged over 5 months. Requests were often characterized by inadequate documentation and a low priority for both AbitibiBowater and the OMNR. In contrast, the average time from submission to approval/denial for the last three years was reduced to approximately 1 month. Quality of requests was greatly improved and correspondence turnaround time was reduced.

We commend OMNR and AbitibiBowater for their successful efforts to improve the quality of FMP amendment requests and efficiency in processing them.

[20] Some amendments included more than one activity (i.e. an amendment may deal with roads and AOCs).

3.3.9. Annual Work Schedules

Forest management activities planned in each Annual Work Schedule were consistent with those outlined in the relevant forest management plans. All AWSs conformed to the required format and specifications of the FMPM or phase-in requirements in effect at the time.

Forest Operation Prescriptions (FOPs) were prepared for all harvest, renewal, tending, and protection activities as required. Prescriptions were consistent with the relevant FMP Silvicultural Ground Rules (SGRs).

We conducted a detailed review of the OMNR file for 10 of the revisions. Documentation was complete, the filing system was excellent, and FMPM procedural requirements, including consultation, were met.

The quality of revision requests and efficiency in processing them followed a pattern similar to FMP amendments, showing substantial improvement between the first two years and the following three years.

3.4. Plan Assessment and Implementation

3.4.1. Plan Assessment

The 2008 FMP is a redesign 2002 FMP caribou mosaic into what is believed to be more effective habitat configuration. This mosaic is based on the *Forest Management Guidelines for the Conservation of Woodland Caribou* and reflects careful consideration by the planning team. It is our opinion that the objectives and targets of the 2008 FMP provide an acceptable balance of social, economic and environmental considerations given current knowledge and the current forest condition.

The 2008 FMP is consistent with the requirements of the 2004 FMPM. Plan direction was clear and where required management implications were described.

We did find that the documentation of the rationale for the proposed management strategy, the descriptions of the natural benchmark scenario and the various scoping investigations was limited in both the FMP text and the Analysis Package. We provide a recommendation in Section 3.3.4. to address this concern.

FMP tables accurately reflected outputs for the long term management direction with the exception of FMP- 4, (i.e. Summary of Managed Crown Productive Forest Area by Forest Unit) where the area of managed reserve was incorrectly

included in the "available area total". IA recommendation is provided to address this concern.

Recommendation # 3:

AbitibiBowater should amend FMP- 4 (2008 FMP) to remove the area of managed reserve (unavailable area) from the available area total.

3.4.2. Areas of Concern

An Area of Concern (AOC) is a defined geographic area, within an area selected for forest management activity which is adjacent to an identified value on the values map. It represents an area where forest operations will be reviewed, controlled, modified, or excluded, as required to protect the value associated with the area.

The Caribou Forest contains numerous natural heritage features (nesting sites, fens, riparian areas, cool water fisheries). There are a number of remote tourism facilities, woodland caribou calving sites and diverse recreational (angling, canoeing, viewing) uses with remote access. OMNR staff indicated that there was adequate funding and information available for 2007 Contingency Plan and 2008 FMP AOC planning. Provincial guidelines were used to develop AOC prescriptions and/or additional management strategies to provide appropriate protection to identified values.

Specific values on the Forest were contained in the OMNR NRVIS layer and depicted on values maps contained in the 2008 FMP supplementary documentation. The FMP contained a discussion on habitat for Species at Risk. Aboriginal values (where available) were included in NRVIS and, when appropriate, displayed on values maps.

For the 2007 Contingency Plan and 2008 FMP, Species at Risk range maps were reviewed in relation to the SFL area. Values maps were reviewed with the LCC, the Mishkeegogamang First Nation and the public. The values maps were upgraded as the planning process proceeded based on input received at the various consultation stages.

The plans and the AOC prescriptions include a procedure for protecting unmapped and unidentified values that may be identified during plan implementation. For example, contractors were informed that they must immediately stop operations when they find an unidentified nest and report it to the Company so it could be assessed with the OMNR for protection requirements. Company EMS training includes Species at Risk and values protection and is mandatory for all workers. A Company Field Handbook (updated June 2008) was provided to all Company staff and contractors to

ensure operations are conducted in compliance with all prescriptions. Regular formal and/or tail gate meetings were used to review AOC operating conditions and access strategies. Sign-off maps identified and described the AOC's in detail

Timing restrictions for activities such as the installation of water crossings were incorporated into AWS.

3.4.3. Harvest

All planned harvesting activities are confined to identified Caribou A blocks (in order to maintain the integrity of the planned mosaic) or small portions of Caribou AE blocks during the audit term. The mosaic is, however, being implemented in a number of "A" blocks which have remained "open" for an extended period of time. While the wide area of operations is, in our view problematic (considering the concern for caribou which are sensitive to access), we recognize that there are still ten years remaining to harvest these blocks. It is also crucial that the forest industry be provided with an opportunity to balance wood costs over its operations to remain viable.

While no salvage operations were planned in the 2008 FMP, salvage operations were conducted to salvage timber from a small burn. All FMPM requirements for this harvest were met.

All harvesting was conducted using the clearcut silvicultural system utilizing tree length, cut to length or chipping operations. Logging operations were conducted mainly by Highstone Logging (on behalf of AbitibiBowater), and Buchanan Forest Products Ltd. (BFPL).

BFPL operations are independent of AbitibiBowater supervision. BFPL is responsible for activities such as block layout, road construction, harvesting, compliance and all post harvest and silviculture operations within their area of operations. At the time of the field audit none of the BFPL contractors had active operations on the Forest.

During the field audit we inspected 23% of the harvested area. Harvest operations were properly implemented and reflected operator care with regard to site damage and wood utilization. This observation is supported by the low number of Not-in-Compliance (NIC) reports associated with harvest operations during the audit term (395 harvest inspections vs. 13 NICs). Merchantable wood was utilized to the extent possible given prevailing markets for some species and products. Unmarketable wood at roadside had been scaled (mainly poplar).

Our review of compliance records indicated that there were relatively few non-compliance findings related to wasteful practices. Reported non-compliances were for merchantable wood being left in slash piles or left in the bush or at

roadside. These reported issues were classified as being of "minor significance" by OMNR inspectors and, where possible, corrective measures were taken to address the infraction.

During the audit term, however, significant quantities of poplar were left at roadside when Ainsworth cancelled a contract commitment for 20,000 m^3 and declined shipments of poplar to the mill. Despite best efforts by AbitibiBowater few alternate markets could be found. Stumpage was paid on all timber harvested. During the field assessment the audit team was informed by the OMNR that AbitibiBowater's efforts to market hardwoods were commendable.

We did observe some incidences of localized rutting, and areas where productive forest land had been lost due to chipper debris and logging slash (Section 3.4.4.). The rutting was typically associated with operations in lowland forest types or in poorly drained areas within upland areas. In some instances, the deep rutting could be attributed to efforts by the operator to restrict machine traffic to one or two trails to minimize impacts on the site. It was our conclusion that rutting was not a widespread problem. Regeneration would not be compromised by the ruts as they will "fill" with sphagnum over time which provides a seedbed for spruce. Environmental effects such as the ponding of surface water can also be expected to diminish over time as ruts fill with moss and soil. Rutting was also a concern during the previous audit and a recommendation to train operators was provided in the report. Records indicate that the required training was implemented.

The Silvicultural Ground Rules[21] were developed in accordance with the *Silvicultural Guide to Managing for Black Spruce, Jack Pine and Aspen on Boreal Ecosites in Ontario*. An exception to this guide[22] was noted in the FMP as required by the FMPM. Silvicultural Treatment Packages (STPs) were developed using OMNR manuals and the experience of OMNR and AbitibiBowater staff in consideration of FMP objectives. All inspected areas were approved for operations in the AWS's and harvesting conformed to the Silvicultural Ground Rules.

The *Natural Disturbance Pattern Emulation Guidelines* (NDPEG) were implemented within harvest blocks in an effort to mimic natural disturbance site characteristics (i.e. residual standing timber, insular and peninsular patches). Field observations during the audit indicated that NDPEG requirements were met during operations. Residual species selection improved over the audit term. There were no issues with respect to the number of trees retained or the range of residual tree diameters.

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[21] SGRs are specifications, standards, and other instructions that direct silvicultural activities on a forest management unit during the period of the FMP. A silvicultural treatment package (STP) is the path of silviculture treatments from current condition to future forest condition; STPs include the silvicultural system, harvest and logging method(s), renewal treatments, tending treatments and regeneration standards.

[22] Full tree logging on Ecosites 11 and 12 where total soil depth is less then 20 cm.

Historically, actual harvest levels have not exceeded planned levels. During the 2002-2007 FMP term, 63% of the planned conifer harvest volume and 47% of the planned hardwood harvest volume was realized. In 2007-2008 harvest levels achieved 46% of the planned conifer level and 0.2% of planned hardwood volumes. Overall volume utilization on the Caribou Forest has declined to 38% of the planned utilization levels due to the economic downturn in the forest sector. A lack of markets has contributed directly to the underachievement of hardwood harvest targets. Several blocks have had conifer harvested but the hardwood within the blocks was retained in anticipation of improved markets.

Another emerging trend is that over the past few years average clearcut sizes have declined. For example, the 2007/2008 Annual Report (AR) indicates that the average clear cut size was 133 hectares, with harvests in the majority of the aggregated clearcut locations being less than 260 hectares. This emerging trend is a deviation from the caribou strategy which requires that the majority of harvest areas should be greater than 260 hectares. Harvest area sizes reflect markets, mill closures, etc. Ten years remain available to achieve the caribou mosaic objectives; however, if this trend persists it could become an issue with respect to the achievement of caribou objectives.

Continued inability to achieve planned harvest levels and other harvest related objectives (i.e. clearcut block aggregate area) are the largest contributing factors to the current partial-achievement of the long term management direction on the unit. A chronic under-harvest is significant in that it will impact the achievement of the caribou strategy, is a lost economic opportunity and will present future problems for management should stands become less economic as they break up and transition to a younger age cohort. The management opportunity to control stand composition for caribou habitat may also be lost as stands are by-passed due to operability constraints.

3.4.4. Renewal

The audit sampled 46% of the renewal activities (artificial and natural) undertaken during the audit period. It is our assessment that a successful renewal program is being implemented (Photograph 1).

PHOTOGRAPH 1. SUCCESSFUL ARTIFICIAL RENEWAL

All observed renewal activities were approved in the forest management plans and complied with the applicable silvicultural ground rules. Renewal activities were consistent with the Forest Operations Prescriptions (FOPs) and were appropriate for the specific site conditions. Our review of FOIP reports indicated that renewal activities were largely compliant (i.e. 77 inspection reports with 9 incidences classified as NICs).

There was an underachievement of planned renewal activities as a result of the decrease in harvesting; however, the level of renewal was generally in balance with the area harvested. The total harvest area during the 2002-2007 plan term was 16,483 hectares with 20,230 hectares regenerated by natural regeneration, planting or seeding. For the 2007-2008 term, 4,759 hectares were harvested and 3,489.4 hectares renewed. Figures on the area of depletion in 2008 were not available at the time of the audit, but AbitibiBowater indicated that 3,665 ha were renewed.

Although planned renewal targets were not achieved, the mix of treatments (e.g. planting vs. seeding in the artificial renewal program) was proportional to the FMP strategies for renewal.

Natural Regeneration.

During the audit term natural regeneration activities were below planned levels (approximately 47% of planned). This underachievement of natural renewal is reflective of a historic trend, where actual natural renewal has achieved about 50% of management plan targets. The underachievement of planned targets can be attributed to the lower than anticipated level of harvest and the fact that during field inspections some areas planned for natural renewal were found to better suited to artificial renewal due to anticipated vegetative competition.

Artificial Renewal

The level of artificial renewal was higher than planned levels achieving 106% of the planned target (2002 and 2007 terms). During this period 5,666 ha were planted and 1,947 ha were seeded. This overachievement reflects efforts by the AbitibiBowater to;

- Better address site conditions (i.e. anticipated vegetative competition).
- Deal with a backlog of untreated area from past plans.
- Meet plan objectives related to a conifer dominated landscape.

The 2002-2007 FMP had a target to plant 250,000 red pine seedlings during the audit term. Few sites capable of supporting red pine were encountered during operations and as a result only 1,692 seedlings were planted. Red pine planting targets were reduced in the 2008 FMP (10,000 seedlings per year). An assessment of the suitability of the new planting targets will be made based on achievements to date when the Year 7 and Year 10 ARs are produced.

During the field audit we observed several sites where artificial renewal had occurred prior to slash pile burning as a result of delays in the burning program (i.e. poor weather conditions). Those delays resulted in burned pile sites not being renewed during the planting program. While not a widespread problem, there is an investment loss when reclaimed productive forest land does not receive renewal treatments. We do not provide a recommendation to address this issue because the problem did not appear to be widespread, and we note that approximately 70,000 trees are scheduled for planting on former slash pile sites in 2010.

During our site inspections we observed instances where planted seedlings were poorly spaced. Many spruce renewal sites showed significant ingress of natural jack pine. Without future tending, many of these sites will be overstocked resulting in lower volume yields and smaller dimension timber. From the perspective of caribou habitat management, stands with higher densities are considered less favourable habitat due to shorter sight distances (important for

the early detection of predators) and lower levels of lichen production due to shading.

In order to meet FMP objectives there will be a future requirement to monitor stand development and implement tending interventions as required. It is suggested that AbitibiBowater monitor planting densities, ecosite types, and site silvicultural treatment regimes to better control initial stand densities.

Site Preparation

During the audit term there was a shortfall in the achievement of planned site preparation targets[23] due to the lower than anticipated harvest and field assessments that indicated site preparation was not required on some areas.

We inspected 22% percent of the area that had been site prepared and determined the FMP objectives had been generally achieved. The site preparation program generally accomplished the planned objectives of making mineral soil available for planting nursery stock or for natural and artificial seeding. On some sites there was heavy slash or rock outcrops that limited the effectiveness of the site preparation.

Areas designated for site preparation (SIP) have historically been treated using passive disk trenchers. Based on our site inspections, we concluded that these treatments have had variable success in terms of creating plantable spots as passive trenchers frequently bounce over plantable areas after striking rocks, logs and slash.

It is our opinion that AbitibiBowater needs to expand its silvicultural "toolkit" to more effectively address the range of site conditions occurring on the Forest (e.g. use of "hydraulic" site preparation equipment, increased use of chemical site preparation, etc). Company staff concurred with this assessment, and informed the audit team that AbitibiBowater had contracted a Bracke BD296 for fall site preparation work in 2009. This equipment allows for computer and operator adjustments to address on-site conditions such as thick duff or debris.

Slash and Debris Management

We had concerns about the loss of productive land associated with slash from harvesting and debris from chipping operations. The issue of slash management was raised in the previous audit. We did observe efforts to manage slash (i.e. piling and burning by conventional methods or heli-torching[24]) (Photograph 2).

[23] In 2002-2007, 63% of planned area target was achieved, 2007-2008, 85% of the planned area target was achieved and 2008-2009, 61% of the planned area target was achieved.
[24] Heli-torching uses helicopters to ignite piles. This strategy alleviates access issues and often accelerates the rate of pile ignition.

However, there were areas were slash management had been ineffective or not undertaken (Photographs 3, 4 and 5).

PHOTOGRAPH 2. SLASH PILES IGNITED BY "HELI-TORCHING".

PHOTOGRAPH 3. UNPILED SLASH ALONG ROADSIDE

In some areas slash management had not been implemented for a two year period during the audit term. We understand that these areas had been harvested by BFPL and that slash had not been piled as a result of a decision to curtail slash piling and burning due to economic considerations. As the SFL holder AbitibiBowater has an obligation to ensure that required forest management activities are implemented. To treat these sites AbitibiBowater may incur additional costs in excess of the Forest Renewal Trust Fund rates (for slash management) that were established at the time of the harvest. These costs may include moving equipment to the areas and associated road maintenance work, etc. As such, a revision to Forest Renewal Trust Fund rates may be required to facilitate the work.

The assumption of forest management obligations associated with the BFPL commitment area extends beyond slash management to encompass broader issues such as the removal of BFPL-owned portable bridges, to the clean-up and decommissioning of BFPL work camp sites (issued under OMNR land use permits) to outstanding compliance obligations. We provide the following recommendation to address these concerns.

Recommendation # 4:

District OMNR, in collaboration with AbitibiBowater, should develop and implement a strategy to address forest management and/or compliance obligations associated with the BFPL commitment area.

In addition to the slash management issues observed during the audit term, there was evidence of a legacy of slash from previous management terms (Photograph 4). The implementation of the caribou mosaic and road abandonment strategies (e.g. planting of decommissioned roads) will make it difficult, if not impossible to address historic slash and debris. The burning of the slash and debris will be problematic due to pile conditions (i.e. depth of slash and debris, etc.) and the presence of advanced growth adjacent to slash. While these areas of slash will eventually decompose, forest land has been removed from production for an extended time frame.

During the field assessment there was evidence of work to distribute chipper debris in landing areas to a depth of not more than 15 cm to facilitate planting. The use of slash debris as fill during road construction was being assessed. These actions should reduce debris loads and facilitate treatment and/or renewal of the chipper landings.

Although we recognize that the SFL holder is aware of the slash and debris management issues and has taken proactive measures to address the problem, we note that slash management was an issue in the previous IFA and provide the following recommendation.

Recommendation # 5:

AbitibiBowater should implement a program to address slash and debris associated with past (where it is cost effective and practical) and on-going operations.

PHOTOGRAPH 4. THE LACK OF SLASH MANAGEMENT HAS RESULTED IN THE LOSS OF PRODUCTIVE FOREST AREA FOR AN EXTENDED PERIOD OF TIME

PHOTOGRAPH 5. EXTENSIVE AREA OF CHIPPING DEBRIS

3.4.5. Tending and Protection

Tending treatments are often required to ensure the survival and optimal growth of desired crop species. It may involve cleaning (i.e. the removal of undesirable and competing vegetation) and/or the spacing of desirable stems (pre-commercial thinning). Cleaning is accomplished by manual, mechanical and/or chemical means. Pre-commercial thinning is prescribed in overstocked stands (typically jack pine) to reduce stand density and accelerate diameter growth. Consistent with the FMP objectives to increase or maintain conifer and remove hardwood, these activities are required to ensure conifer regeneration is successful on more competitive sites.

During the 2002-2007 term, 60% of the spacing treatment target was achieved. The shortfall in treatment was attributed to a lack of suitable sites where spacing treatments would achieve the desired results and the cancellation of a First Nations program directed at spacing treatments (the Mechanical Spacing Training Program). No spacing treatments were planned or occurred in either the 2007-2008 or 2008-2009 terms. It is not expected that this will adversely affect forest sustainability.

Chemical tending treatments achieved approximately 74% of the planned levels over the audit period.

The field audit inspected 100% of the tending undertaken during the audit term. Based on our inspections the tending program was effective (i.e. treatments were required, well-timed and effective). Similar to the discussion in Section 3.4.4., AbitibiBowater should consider utilizing other approaches to augment current strategies and practices to control competing hardwoods on some sites (e.g. the use of techniques such as topping residual hardwood trees may reduce hardwood ingress).

No compliance issues related to the tending program were reported during the audit period.

No protection activities were undertaken during the audit term.

3.4.6. Renewal Support

Renewal support activities include tree seed collection, planting stock production and tree improvement operations. Sufficient quantities of seed were collected to support seeding and planting programs during the audit term. AbitibiBowater participates as a partner in the Superior/Woods Tree Improvement Association. Activities of the association include orchard and test site maintenance.

Sufficient funds were maintained in the Silvicultural Trust Account to support the program.

3.4.7. Access

Road construction, water crossings, road maintenance and other access activities must be conducted in accordance with the FMP, AWS, policies, guidelines and laws in effect during the audit term. It is our assessment that access planning, construction and maintenance was generally well done during the audit term.

Interviews with Company staff and planning team members indicated that adequate information was available to properly plan access requirements for the 2002, 2007 and 2008 FMPs. Document review and interviews revealed that LCC and public comments related to access were reviewed and considered in road planning. The 2007 Contingency Plan and the 2008 FMP contained all the required data for primary and secondary roads. Planning for road access was consistent with harvest plans based on the caribou mosaic. As required, access controls were planned to protect tourism, caribou and other non- timber values.

We reviewed a sample of road use management strategies adopted in the 2008 FMP and determined that an environmental analysis was completed that included;

- a construction rationale,
- an assessment of potential effects,
- an assessment of mitigation measures,
- an assessment of potential alternatives (where required).

Selected road corridors were shown on operations maps and alternate road locations were provided in the supplementary documentation.

The 2004 IFA identified issues related to water crossing maintenance and we placed a priority on crossing inspections. AbitibiBowater delivers watercourse monitoring through its Environmental Management System (EMS). All travelled roadways and water-crossings are visually inspected on an ongoing basis. Water-crossings requiring repairs or re-installation are formally recorded through an EMS revision process which is reviewed and approved by OMNR. Culverts are continually assessed and maintenance performed as necessary (e.g. beaver dams, debris removal). Beaver control is an issue on the Forest. We were informed that contacting First Nation trappers and receiving a timely response was an ongoing problem. Sensitivities to First Nation assertions with respect to resources and land also sometimes made it difficult to initiate solutions without their concurrence (e.g. non Aboriginal trappers). In response to this issue AbitibiBowater is depending increasingly on the installation of "beaver bafflers" (See Photograph 6).

PHOTOGRAPH 6. BEAVER BAFFLER ON CULVERT INTAKE

During the field audit, we viewed twenty-five (12%) of the water crossings installed during the audit term. They were well constructed and were in accordance with the FMP, the AWS and guidelines. During the audit term there were 150 FOIRS related to access with 8 minor NICs. Roads are monitored on an on-going basis to ensure that public safety and environmental integrity at all water crossings is maintained. All staff and contractors are required to report any issues regarding roads and water crossings encountered while travelling in the Forest. A number of primary and secondary roads are identified in the EMS as core roads and inspected annually by the roads services contractor.

Similar to the previous IFA audit, our field investigations on the Fowler, Watin, and 702 Fire Roads revealed that cross drain[25] installation and maintenance are a problem on the unit. Water flow obstructions and roadside ponding was observed. We provide the following recommendation to address this concern.

[25] Cross drainage structures are used to divert water away from the road surface by controlling water flow and ponding in roadside ditches. These functions serve to protect the road surface and structure. Many cross drains are installed during winter operations and due to presence of ice and snow are occasionally discovered to be too high (perched) to effectively deal with spring water conditions.

Recommendation # 6:

AbitibiBowater should improve its cross drainage culvert installation, maintenance and monitoring program.

A requirement in the IFAPP is that auditors inspect a minimum 10% sample of roads work funded under the Forest Roads and Maintenance Agreement. We inspected 100% of the road construction and maintenance activities (e.g. ditching, grading, washout repair, etc.) under the Agreement and confirmed that work was completed as invoiced.

During the field audit we inspected a number of current and decommissioned aggregate pits. We found that the decommissioned pits had been appropriately rehabilitated. Interviews with OMNR compliance inspectors indicated that there had not been any issues associated with aggregate removals during the audit term.

The construction of roads in caribou habitat is problematic for caribou management as roads provide travel routes for predators and increase browse for alternate species such as moose. AbitibiBowater had committed the necessary resources to implementing the road-less strategy aspects of caribou management. Road decommissioning initiatives included water crossing removal, berming, site preparation and seeding of decommissioned roads (Photograph 7).

PHOTOGRAPH 7. SCARIFICATION AND PLANTING OF A DECOMMISSIONED ROAD.

3.5. System Support

3.5.1. Human Resources

Bowater received SFI certification in 2004. Our assessment is that the certification met IFAPP human resources requirements.

District OMNR had utilized a range of training methods and materials to ensure employees were fully aware of their responsibilities, and capable of carrying them out.

We examined the training records of a sample of employees and determined that staff had attended relevant courses such as Annual FMP Workshops, SFMM and NDPEG training. In our opinion, the training was timely and relevant.

3.5.2. Documentation and Record Quality Control

The Company and OMNR information management and maintenance systems must be complete, effective and include current forest indicator and inventory changes. Documentation, information and data must meet FMPM and Forest Information Manual (FIM) requirements and specifications.

AbitibiBowater's document and record control process was directly examined at the Sioux Lookout office and indirectly at the Thunder Bay office by requesting specific documents (e.g. training documents and different forms of tabulated/integrated information). All information requests were responded to in a timely manner.

We interviewed individuals who had direct and/or indirect responsibilities for the collection, control, distribution and updating of documents. There was a system to remove and replace obsolete documents. Paper copies of documents were stored in specific locations in the Sioux Lookout Office and readily available for our audit inspections.

Under its current business model, AbitibiBowater makes extensive use of consultants to complete large portions of its required documentation, reporting and planning on the Forest (e.g. Annual Reports, Annual Work Schedules). While the work was completed, we did note a trend where the initial submissions of documents was often of low quality and had to be resubmitted numerous times in order to receive OMNR approval. Over the audit period there was a declining trend in the number of document re-submissions, however some errors still exist within approved documents (e.g. FMP-4, Year 10 AR) and persist in the reporting process (i.e. the "Trends" report required a number of re-submissions).

We believe that AbitibiBowater needs to carefully monitor and continually assess its human resources strategies and delivery mechanisms for forest management and provide the following recommendation.

Recommendation # 7:

AbitibiBowater needs to ensure it has sufficient document quality control procedures to improve the initial quality of forest management reports.

The OMNR had effective filing and document control processes. Our requests for information were met in a timely manner. Maps and documents were kept current and there was a system to ensure maintenance and distribution.

We were able to locate copies of documents requiring cooperative reporting in both the AbitibiBowater and OMNR offices. As discussed in other sections of this report the full range of required documents (e.g. AWS, ARs, amendments, etc.)

substantially met content requirements and submission deadlines in the last years of the audit term. Our assessment was that there was good communication between the parties that ensured joint reporting occurred within required timeframes. This demonstrated considerable improvement over the circumstances described in the 2004 IFA.

Both organizations were making effective use of geographic information systems technology (GIS). AbitibiBowater maintains an information management system (Woodlands – The System) which provides a capability to conduct inventory updates. GIS layers in this system are linked to the FRI and include free-to-grow survey areas, silvicultural projects, historical silvicultural information, and silvicultural effectiveness monitoring survey areas.

3.6. Monitoring

Monitoring programs must be developed and implemented to assess compliance and effectiveness of operations in relation to the FMP, laws and regulations. Operations must be reported regularly and reporting must examine the effectiveness of these operations in achieving management objectives. Forest management operations are monitored and audited to assess compliance and to evaluate progress and results. Monitoring is conducted for three purposes: compliance, effectiveness and effects.

- Compliance monitoring deals with the inspection of a forest operation to ensure that it conforms to the approved plan or permit.
- Effectiveness monitoring is conducted to determine if the operations undertaken are having the desired outcomes.
- Effects monitoring assesses the impacts of operations on various aspects of the forest ecosystem through long term research studies.

Compliance monitoring of forest management activities is shared on the unit by AbitibiBowater, BFPL and the OMNR. AbitibiBowater and BFPL are responsible for field inspections for compliance and non-compliance, reporting to the OMNR, implementing corrective or preventive measures, and providing training and education to contractors and staff. The OMNR audits industry compliance inspections, assesses the significance of instances of non-compliance and determines corrective and/or enforcement actions.

3.6.1 District Compliance Planning and Associated Monitoring

Forest compliance monitoring is required to ensure forest operations are conducted according to the legislation, approved plans and to prevent damage to the Forest. The OMNR and forest industry are required to inspect and report on access, harvest, renewal and maintenance activities. The Forest Operations

Information Program (FOIP) stores information collected through forest compliance monitoring for analysis and reporting to OMNR, the forest industry and the public. Inspections can result in 1 of 3 determinations: In Compliance (IC), In Compliance with Comments (ICWC) or Not in Compliance (NIC).

The 2004 IFA provided 9 recommendations that were directed at enhancing the quality, effectiveness and timeliness of compliance planning and monitoring (Section 8.1.9, Table13). The large number and breadth of the recommendations identified a serious shortfall in performance by the Company and the OMNR. However, it is clear from our review of records, interviews and field observations that all parties responded quickly and effectively to address the identified concerns.

The District produced Annual Compliance Operations Plans (ACOPs) that showed steady and significant improvement over the 2004- 2009 audit period. There is evidence that the District had made a concerted effort to improve the overall value of the information in the ACOP document. A District Risk Analysis Tool was developed to assist in setting activity targets supported by a Directed Work Matrixto aid in developing staff work priorities. A Summary Report at the end of each ACOP reports on target achievement at the end of each plan year. Where targets were not achieved an explanation was provided.

We note that the OMNR inspectors were motivated and knowledgeable about the Forest with an element of pride associated with the changes in compliance planning and reporting that had occurred. This significant "turn around" was not a small achievement, and signifies to us that the District Manager and Area Supervisor provided the leadership and direction missing during the previous audit period.

We reviewed a sample of Forest Operations Inspection Reports (FOIRs) for completeness and adherence to submission deadlines. These are submitted electronically into the Forest Operations Information Program (FOIP). District OMNR staff were knowledgeable and individual FOIRs were readily retrieved from the FOIP system. In our assessment, inspection reports are now complete and being submitted in a timely manner. Table 5 provides a summary of OMNR compliance inspections.

TABLE 5. NUMBER OF OMNR COMPLIANCE INSPECTIONS AND RESULTS, CARIBOU FOREST 2004-2009 *

Activity	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
Access	9 (1)	7 (1)	14 (4)	6 (1)	8
Harvest	4	9 (5)	4 (3)	3	4 (2)
Renewal	2 (1)	1	2	1	1 (1)
Maintenance					
TOTAL[26]	**17**	**23**	**27**	**11**	**16**
% NIC	**12 %**	**26 %**	**25 %**	**9 %**	**19 %**

Source: Annual Reports - FOIP

( ) Numbers in brackets are "NIC" reports

* combined IC and ICWC

We note the lack of inspections related to the maintenance activity. On this Forest this activity is primarily aerial spraying and the OMNR had determined it was relatively low risk because the Company must conform to a suite of Ministry of the Environment regulations. The OMNR does look at proposed spray areas to determine if site conditions warrant treatment; however, those inspections are not recorded in the FOIP system. Slash pile burns are also considered low risk because they are carried out in late fall and on specific sites. Our assessment is that the OMNR risk analysis and priority setting vis-à-vis staff numbers and workloads is reasonable.

We were informed by the OMNR that there was an adequate number of staff to meet its monitoring obligations. There was a significant reduction in industry forest operations during the audit with the major overlapping licencee in receivership at the time of the audit; however, we were informed that even with a renewal of full industry operations that the current staff levels would be adequate based on better compliance planning, realistic risk assessments and a more systematic assignment of staff inspection priorities.

The average NIC rate over the period was approximately 18% for OMNR inspections[27]. All NICs were successfully resolved and there was clear evidence of good communication and proactive efforts by District and Company staff to prevent future occurrences.

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[27] NIC rates for harvest appear to be very high however, most NICs were not directly related to harvest activities but included items such as certificates on fire extinguishers, etc.

Joint inspections are routinely planned and carried out and there was evidence that the OMNR and industry staff have developed a working arrangement that has resulted in relatively few major compliance problems. This is in contrast to the relations apparently encountered during the 2004 IFA, indicating the OMNR District Manager and staff have made determined efforts to address identified problems.

Our overall assessment is that over the audit term the OMNR developed an effective compliance program that conforms to all applicable policies, manuals and procedures and has addressed issues identified in the previous IFA.

3.6.2. SFL Holder Compliance Planning and Monitoring

The 2007 Contingency Plan and the 2008 FMP include Compliance Plans developed in accordance with the requirements of OMNR's *Guideline for Forest Industry Compliance Planning and the Forest Compliance Handbook.* The Plans describe the extent and frequency of inspections, the role of the licencee and any overlapping licences, and the preparation and submission of inspection reports to the OMNR. The 2008 FMP contains the statement that;

"*Forest compliance monitoring is an everyday activity for all individuals working in forest operations. Everyone, including equipment operators, supervisors, contractors, overlapping licencees and Bowater management, has a responsibility to monitor forest compliance as part of their daily activity.*"

The 2008 FMP also includes a number of objectives related to compliance (see Section 3.7.2, Table 11). These include objectives related to resource protection, training and education, communications, maximizing the efficiency of forest operations inspections, overcoming historical compliance problems, and a goal of continuous improvement.

The primary wood supply commitment holder on the Caribou Forest is Buchanan Forest Products (BFPL). BFPL and AbitibiBowater contractors carry out all harvesting, renewal, access and monitoring activities. The amount of inspection activity by year and forest activity by industry is shown in Table 6.

TABLE 6. NUMBER OF INDUSTRY COMPLIANCE INSPECTIONS AND RESULTS, CARIBOU FOREST 2004-2009 *

Activity	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
Access	29	22	28 (1)	7	12
Harvest	68 (1)	67 (1)	110 (1)	57	69
Renewal	23	21 (3)	8 (2)	5 (1)	3 (1)
Maintenance	11	3	1	1	1
TOTAL	**132**	**117**	**151**	**71**	**86**
% NIC	**1%**	**3%**	**2.6%**	**1%**	**1%**

Source – FOIP

( ) designates NIC

* combined IC and ICWC

We reviewed a sample of Industry NIC determinations; the majority of incidents were classified by the OMNR as being of 'minor' significance.

The 2004 IFA stated that; "*...differences in the number of the reported non-compliances and the frequent use of the ICWC category suggest conflicting interpretations with respect to various types of non-compliances...*" and a recommendation was provided. We reviewed the Action Plan and Status report and determined that the Company and the OMNR did follow through with the planned remedial actions (joint inspections, audit spot checks, review of data, training). Nevertheless, a review of the inspection reports shows differences continue to exist. Table 7 provides a summary of the percentage of inspections that resulted in NICs and ICWCs for the OMNR, AbitibiBowater and BFPL.

TABLE 7. PERCENTAGE OF INSPECTIONS BY AGENCY RESULTING IN NICS AND ICWC.

Agency	Percentage NIC	Percentage In Compliance with Comments
OMNR	20%	49%
AbitibiBowater	2.5%	38%
Buchanan	0.7%	34%

The ICWC category shows that the companies were relatively the same with the OMNR providing approximately 10-15% more "comments" with its inspection reports. We do not feel that difference is a matter of concern. The percentage of

inspections resulting in NICs was also approximately 18% higher for the OMNR. In discussions with involved staff the explanations for this difference included;

- The OMNR tends to focus its inspections in areas where there is a known problem or a potentially higher risk for non compliance.
- Some OMNR inspections are undertaken in response to specific complaints or observations made by OMNR staff, LCC members or the public.
- There is a natural tendency for company inspectors, who work directly with operators, to suggest on the spot preventative or mitigation actions before a NIC needs to be assessed.
- Some aspects of any enforcement activity are subjective and some different interpretations with respect to the identification of NICs do exist between the OMNR and Company inspectors.

We note all industry inspectors (AbitibiBowater and BFPL) had completed the OMNR training course and that training updates are routinely completed. Joint inspections are carried out by the OMNR and Company and effective communications were in place. The difference in the ratio of assigned NICs was not a particular issue for the OMNR. We found no evidence to indicate it is having a detrimental effect on operations or forest sustainability. For all these reasons we do not feel a repeat of the 2004 IFA recommendation is required.

We reviewed the remedial actions taken for a sample of NICs in the different activities and concluded that they were effective. Reasonable punitive actions were applied for offenses and the Company/OMNR hold a general philosophy that education and training is the most effective means of ensuring future compliance.

The Annual Work Schedules contained annual Compliance Plans that provide monitoring and Inspection schedules. They provided specific information on sensitive areas and details on the Companies planned monitoring programs (e.g. bird nest monitoring, road inspections, pit inspections). It is our assessment that the annual Compliance plans meet required standards.

The ARs over the audit period show an increase in both the quantity and quality of information and associated discussion related to monitoring.

Interviews with inspectors and senior AbitibiBowater staff revealed that there were an appropriate number of inspectors, especially in light of the industry downturn and the bankruptcy of the major overlapping licencee.

Our assessment is that the Company has developed compliance plans in accordance with all SFL and OMNR requirements. There is an effective field

inspection and monitoring program in place that has resulted in relatively few compliance problems on the Forest.

The Company has had some issues with late submission of FOIP reports. The OMNR indicated to us that this was not a major issue, but did indicate it had to occasionally remind Company officials to make submissions. Our assessment is that the number of late submissions do not require a Recommendation, but we do caution the Company that reports must be submitted to the database within the prescribed timelines.

AbitibiBowater conducts annual meetings with BFPL personnel where harvest block issues and AOC prescriptions associated with up-coming harvest blocks are discussed. BFPL and AbitibiBowater staffs meet periodically to review SFI requirements including sign off by both parties regarding a training program that includes understanding of roles and responsibilities, tracking of training and awareness of the SFI standard.

BFPL compliance inspectors are certified and the company provides regular training to its contractors. We note a number of compliance issues early in the audit period appear to have been related to inconsistent communications between AbitibiBowater and BFPL and, in turn, between BFPL and its contractors. However, we note that communications increased over the audit term with a decrease in issues. The average percent of harvesting NICs assessed to BFPL by the OMNR over the period was approximately 13 percent. We determined the majority of those were assessed as "minor' and corrective action was taken.

Our assessment is that the OMNR and Company have made excellent efforts to address the issues identified in the past IFA. The monitoring program generally adheres to all applicable guidelines and is delivered in an effective manner.

3.6.3. Silvicultural Standards and Assessment Program

Silvicultural effectiveness monitoring, provides opportunities for continual improvement in activities such as silvicultural prescription development, the implementation of silvicultural treatments, the preparation of forest management guidelines and the allocation of silvicultural funding. Silvicultural monitoring is implemented through a number of programs and initiatives including:

- Free-to-Grow surveys (FTG).
- Vegetative Competition surveys.
- Forest Operations Inspection Program (Compliance Monitoring).
- Annual Reports.
- Silvicultural Effectiveness Monitoring (SEM).

- Assessment of Regeneration Success.
- Independent Forest Audits.
- EMS registration audits.
- Sustainable Forestry Initiative (SFI) audits.

AbitibiBowater conducts silvicultural monitoring and assessments using both aerial and ground surveys. Field monitoring activities include assessments of regeneration success, free-to-grow surveys, and assessments of vegetative competition. Assessments of the effectiveness of planned silvicultural operations are also undertaken (i.e. residual tree counts (NDPEG), assessment of the effectiveness of tending treatments and site preparation, etc.).

The Company maintains a GIS information management system (Woodlands – The System) where silvicultural assessment information and data is warehoused. The use of the GIS system facilities the tracking and scheduling of further survey work or silvicultural treatments. Our field audit, interviews and document reviews indicated that actions were taken, as required, to address issues identified by the monitoring and assessment programs. Follow-up actions were undertaken within an appropriate time frame. Our assessment is that the current program is sufficient to assess renewal and the sustainability of forest management activities.

Free to Grow Surveys

Free-to-grow (FTG) survey results for areas harvested between 1994 and 1999 (7,730 ha) indicate an 85.4% renewal success rate (7,774 ha declared successfully regenerated in a survey of 9,104 ha). During the field audit, we surveyed 18% of the area declared free-to-grow in the audit period. All inspected sites were successfully regenerated and had attained FTG status.

The OMNR Silvicultural Effectiveness Monitoring (SEM) Report data indicates that a transition from pure conifer forest units to mixed conifer units is occurring (Spruce Pure Upland, Spruce Pure Lowland and Pure Jack Pine to Mixed Conifer (MC1, MC2))[28]. This report indicates that the magnitude of the shift in forest units is up to 300% for some forest units. Data reported by AbitibiBowater in Annual Reports corroborates the finding that some forest unit transitions are occurring but not to the extent reported by the OMNR. For example, the 2007-2008 Annual Report indicates that "*Of the 2,259.3 hectares declared FTG, 1,280 hectares met the target forest unit. The remainder of the area (979 hectares)*

[28] Mixed Conifer 1 forest units are a grouping of those stands that are conifer dominated but not dominated by a singular conifer species and may also have a component of hardwood associated with them but no greater than 30%. The Mixed Conifer 2 forest unit represents a forest condition where the stand is conifer dominated, but not to a singular species, and the hardwood component growing in association with the conifer is between 31% and 50%.

was declared FTG but did not meet the target forest unit. These areas were generally found to have regenerated to a species other than that intended for the site."

Our assessment is that there are two separate issues:

- The lack of a standardized approach to data collection and assessment procedures between the OMNR and AbitibiBowater.
- The magnitude of forest unit transitions and the significance of those transitions.

Data discrepancies between the OMNR and AbitibiBowater free-to-grow survey results may be the result of different sampling approaches (intensities and methodological approaches), inaccuracies in the original FRI stand descriptions, and/or the timing of sampling. We provide the following recommendation to address this issue.

Recommendation # 8:

AbitibiBowater and the OMNR should standardize Free-to-grow survey data collection and assessment procedures.

Data indicating forest unit transitions and underachievement of forest unit targets warrants continued scrutiny and assessment. SFMM model projections were based on maintaining more area in pure forest units than appears to be occurring "on-the-ground". It is currently unclear if the forest unit transitions from pure conifer to mixed conifer units will be a significant impediment to caribou conservation. Monitoring will be required to assess whether the ingress of hardwoods and/or competition from hardwoods has significant implications with respect to the achievement of plan objectives and the long term management direction. We provide two recommendations to address the issue.

Recommendation # 9:

AbitibiBowater and the OMNR should review the FTG survey data collaboratively to determine post renewal succession rules for the development of the next FMP.

Recommendation # 10:

AbitibiBowater should monitor stand development and implement appropriate silvicultural practices to ensure stand composition and stocking objectives are achieved.

Exceptions Monitoring

Exceptions monitoring on Ecosite 11 and Ecosite12 is accomplished through a forest industry cooperative research project. This monitoring program is designed to assess the level of disturbance and the recovery process of sites being harvested by means of permanent sample plots and case study sites. Results of this monitoring program have not been reported in ARs as required in the FMPM and a recommendation to address this concern is provided in Section 3.6.5.

OMNR Silvicultural Effectiveness Monitoring

The OMNR implements a silvicultural effectiveness monitoring program based on an audit of areas declared free-to-grow, artificial renewal sites, and areas of mechanical site preparation. The monitoring also evaluates silvicultural liability and provides an analysis of silvicultural intensity. Information collected by this initiative will be used to calibrate forest modeling assumptions and silvicultural ground rules in future plans.

Monitoring of mechanical site preparation was completed to assess its effectiveness and the survey indicated that operations were satisfactory. We concur with this finding, but encourage AbitibiBowater to expand the site preparation program to include other equipment (Section 3.4.4.). Artificial renewal sites were evaluated and the findings indicated that overall planting quality was high. There is an ongoing requirement to assess spacing during planting operations in order to control stand densities. Our site inspections corroborated this finding and we identify a concern that increased stand densities may affect plan objectives by lowering future stand volume yields and negatively affecting wildlife habitat (Section 3.4.4.). The results of free-to-grow surveys are discussed in the preceding paragraphs.

3.6.4. Monitoring Indicators of Forest Sustainability

AbitibiBowater is effectively tracking and recording sustainability criteria as required by the FMPM, however, the ability to measure, track and assess forest sustainability criteria is limited by;

- the short duration of the assessment period,

- the underachievement of the planned harvest,
- changes in reporting requirements and formats,
- in some instances, the lack of defined targets against which measurements can be assessed.

The findings of the forest sustainability monitoring program are discussed in Section 3.7.5.

3.6.5. Annual Report

An Annual Report (AR) summarizes the forest management operations carried out during the preceding year (April 1 – March 31). Standards for reporting are established by the FMPM, the Forest Information Manual (FIM) and the Annual Report Preparation and Review Protocol. The purpose of the AR is to document the annual implementation of forest management operations, and to monitor progress towards achieving targets identified in the FMP. The text provides explanations for significant differences between the level of activity scheduled in the AWS and the level of activity that actually occurred. The text also provides a discussion on emerging trends or issues. The Plan Author is responsible for the preparation of the AR with the OMNR having responsibility for specific parts of the document. AbitibiBowater contracts out the preparation of Annual Reports and other forest management documents to a consultant.

The previous IFA identified problems with respect to AR content and timing of submissions. Our review of ARs prepared during the audit term (with the exception of the 2008-09 Annual Report which is not required until November 2009) indicates that report quality has generally improved. Our review of OMNR reviewer comments indicates that issues remain with respect to report content and accuracy of initial submissions. These issues are reflected in the number of re-submissions of ARs required during the audit term (e.g. the 2006-2007 report required 4 submissions, 2007-2008 report required two submissions). This issue is also discussed in Section 3.5.1.

Most AR reporting requirements with respect to required content were met with the final submission of the reports. However, no discussion was provided with respect to the results of exceptions monitoring (i.e. logging of shallow sites). Reporting was limited to the tabular identification of stands meeting the shallow site criterion where harvesting occurred. There were no incidences where major deficiencies in AR report submissions required an Annual Report return/notice from the District Manager to the SFL holder.

Problems also still persist with respect to the timely submission of some of the reports[29] and/or report resubmissions. For example the first submission of the 2004-2005 report was on January 21 and the first submission of the 2006-2007 report was in December, 2007. A recommendation is provided to address the quality of Annual Reports and the requirement to meet FMPM deadlines.

Recommendation # 11:

AbitibiBowater must ensure that all FMPM reporting requirements for Annual Reports are met.

The previous audit also made a recommendation related to a requirement that the OMNR review and respond to AR documents in a timelier manner. Since the last audit, OMNR review responses have been generally in line with the 30 day FMPM requirement. Circumstances associated with other work issues including work related to the preparation of the Contingency Plan did result in some extended response times.

3.7. Achievement of Management Objectives and Forest Sustainability

3.7.1. Report of Past Forest Operations (RPFO) or Year Ten Annual Report (AR)

The Year Ten Annual Report is intended to provide a summary of forest management operations during fiscal year 2006-2007, evaluate progress on the implementation of the forest management plan and provide information to monitor progress towards the longer term achievement of forest sustainability.

The Year Ten AR was prepared by a consultant and was received by the OMNR in December 2007. Three resubmissions were required prior to OMNR approval of the document. The issue of ARs meeting the requirements of the 2004 FMPM is discussed in Section 3.6.5 and a recommendation is provided.

The final version of the report met FMPM requirements. Many of the indicators of forest sustainability could not be fully commented upon due to the fact that only two management terms were being assessed making trends difficult to discern. Other factors, such as changes to forest unit definitions and changes in the selected wildlife species, complicated comparisons. Sustainability criteria data trends are discussed in Section 3.7.3.

[29] The 2007-08 Annual Report First submission was November 7, 2008, second submission date was January 26, 2009 with approval March 23, 2009.

3.7.2. Assessment of Objective Achievement

Table 8 provides a summary of the achievement of the objectives of the 2002-2007 FMP, and the 2007 Contingency plan. Table 9 provides our assessment of the current level of achievement of the objectives of the 2008 FMP.

TABLE 8. SUMMARY OF THE STATUS OF THE 2002 CARIBOU FOREST FMP AND 2007 CONTINGENCY PLAN OBJECTIVES

2002 FMP and 2007 Contingency Plan Objectives	2002 Targets (summarized)	Auditor Comments
FOREST DIVERSITY OBJECTIVES		
Objective A1. Landscape Diversity "To maintain the landscape pattern structure and function (diversity) within the range of natural variation, as it would occur in a natural fire-driven ecosystem for Site Region 3 S."	• Move more towards well-balanced age classes and forest units as per a natural fire-driven ecosystem. • Maintain or move the forest diversity indicators towards bounds of natural variation. • Maintain or move the natural landscape disturbance patterns towards those in guidelines.	The 2002 FMP Selected Management Alternative is consistent with this objective. Forest unit transitions from pure forest units to mixed conifer units are occurring (Spruce Pure Upland, Spruce Pure Lowland and Pure Jack Pine to Mixed Conifer (MC1, MC2). The magnitude of change is not yet clear. Over the past few years average clear cut size has declined.
Objective A2. Red Pine and White Pine Forest Ecosystem "To maintain or increase the presence of red pine and white pine forest ecosystems (as they would occur in a natural fire-driven ecosystem)."	• Maintain or increase the presence of red pine growing stock. • Encourage red pine renewal by up to 250,000 seedlings.	Few sites capable of supporting red pine were encountered during operations and as a result only 1,692 seedlings were planted.

SOCIAL and ECONOMIC MATTERS OBJECTIVES		
Objective B1. Forest Industry Objective "To provide a continuous and predictable, economical supply of timber to the forest industry, acquired through environmentally sound practices."	• Total conifer: 707,000 m^3/yr (Buchanan – 620,000 m^3/yr; Bowater – 87,000 m^3/yr). • Poplar roundwood: 59,000 m^3/yr (Bowater). • Birch roundwood: 10,000 m^3/yr (Bowater).	During the 2002-2007 term, 63% of the planned conifer and 47% of the planned hardwood volume was realized. Overall utilization was 61% of planned compared with 53% overall in the previous term (1997-2002), principally due to an increase in hardwood harvest. A recent economic downturn in the forest industry resulted in a reduction to 38% of planned harvest in 2007-2008 (46% of planned conifer and only 2% of hardwood). Because of the current economic downturn in the forest sector, volume commitments were not fully realized due to mill shutdowns or curtailments.
Objective B2. Local Employment "To make available local employment opportunities in the forest industry on the Caribou Forest."	• Maintain and promote employment opportunities for local people.	The economic downturn has made it difficult for opportunities to be realized.
Objective B3. Personal Use of Forest Products "To make available incidental volumes of timber for such uses as fuelwood, building logs,	No specific target.	Incidental volumes were made available to the general public and some small operators.

fence post material and timber for other personal uses."		
Objective B4. Tourism "To plan, implement and monitor forest operations in a manner that attempts to maintain the economic viability of the resource based (remote and road accessed) tourism industry based on the Caribou Forest."	• Meet all agreements in accordance with the Resource Based Tourism Policy and AOCs.	Agreement conditions are being met.
Objective B5. Other Commercial Usage (Non Timber) "To conduct forestry operations in a manner that considers and respects the other businesses that are located on, or utilize resources within the Caribou Forest (trappers, bait harvesters, wild rice 50 harvesters, etc.)."	• Consult and work with all the independent businesses during plan development preparation and amendments. • Meet all agreements and planning prescriptions respective to other commercial uses.	The 2002 FMP involved wide consultation and based on the evidence we reviewed, agreements are being honoured.
Objective B6. First Nations 1 Involvement "To work with local First Nations communities to identify and implement ways to maintain the inherent social and economic benefits to Native peoples who traditionally use the forest for subsistence and spiritual value."	• Identify First Nations forest management contract opportunities in accordance with Term and Condition #77. • Develop the Native Information Background Report. • Develop the Report on the Protection of Identified Native Values.	These targets have been met.
Objective B7. Private Property/Patent Lands "To conduct forestry operations within the Caribou Forest in a	• Ensure that no negative effects occur to private property or patent lands	This target has been met.

manner that protects private property or patent lands from negative impacts."	from forestry operations.	
Objective B8. Public Access "To provide road access for land use and recreational opportunities, where possible."	• Provide continued opportunities for public accessed recreation through continued road development and road maintenance, where practical.	Notwithstanding the requirements related to the caribou mosaic road access, opportunities have been provided (to the extent possible).
Objective B9. Mineral Development "To maintain or enhance mineral development (prospecting and mining), opportunities on the Caribou Forest."	• Maintain or enhance current levels of opportunity for mining and mineral development.	This target has been met.
Objective B10. Natural Heritage Objective "To conduct forestry operations within the Caribou Forest in a manner that protects provincial park and any other natural heritage values from negative impacts."	• Ensure that no negative effects occur to provincial parks or natural heritage areas as a result of forestry operations.	This target has been met.
Objective B11. Miniss Enhanced Management Area Objective "To carry out forest management activities in a manner that maintains the remote character of the Miniss Enhanced Management Area (EMA), protects wildlife habitat values, provides opportunities for remote	• To keep to a minimum the impacts of forest management activities in aesthetics, wildlife habitat values and remote access lakes.	This target has been met.

recreational experiences and which recognizes tourism activities."		
PROVISION OF FOREST COVER (for those values, which are dependent on forest cover). **Objective C1. Wildlife Habitat** "To maintain a forest landscape pattern that will supply suitable current and future habitat for wildlife over time, within the bounds of natural variation."	• Maintain 10-20% of the capable martin habitat as suitable habitat within core areas. • Maintain continued range occupancy for woodland caribou. • No loss of current critical nesting habitat as a direct result of forest management activities. • Ensure that forest management activities of the SMA do not threaten the availability of preferred habitat for the selected wildlife species at the eco-regional level. • Wildlife habitat for the selected management alternative should be within +/- 20% of the natural benchmark alternative.	The Selected Management Alternative is consistent with these objectives being met. The collection and analysis of related trend through time information will be required to determine if the objectives are being met.
Objective C2. Fisheries Habitat and Water Quality "To maintain water quality and protect fisheries habitat within watersheds where forest management activities occur."	• Protect water quality and fisheries habitat values, in accordance with appropriate guidelines and policies.	The Selected Management Alternative is consistent with these objectives being met. Field investigations and records review during this audit confirm that they are being

Objective C3. Cultural Heritage Values "To protect all known sites and/or high potential cultural heritage values, as defined in the Timber Management Guidelines for the Protection of Cultural Heritage Resources, 1991."	• Identify all known and/or high potential sites.	met. The Selected Management Alternative is consistent with this objective being met. Field investigations and records review in this audit confirm that they are being met.
SILVICULTURE **Objective D1. Productive Forest Landbase** To maintain the productive forest landbase to provide for a continuous and predictable wood flow, as well as other timber and non-timber values over time.	• Maintain or increase the amount of area in managed Crown forest available for timber production over time. • Minimize losses of the productive forest land base to chipper debris and slash piles. • Minimize losses of the productive forest land base to roads and landings.	The managed Caribou forest land base was reduced by ~9% between 1997 and 2007 due to the creation of a new park, classification changes from "managed" to "unmanaged", and changes to information parameters. Changes in land type categories and a change in FMPM reporting requirements from using working groups to using provincial forest units frustrate the clear tracking of changes to the productive land base. As noted in Sections 3.4.4., we have concerns about the loss of productive land to chipper debris and slash piles.
Objective D2. Renewal Program To implement a renewal program that provides merchantable timber products from the forest.	• Develop a silvicultural program that emphasizes conifer production. • Implement an efficient and cost effective renewal	The underachievement in planned harvest area has resulted in an underachievement of planned levels of silviculture.

	program with contributions to the Forest Renewal Trust Fund between $3 to $5 m^3.	Areas surveyed for regeneration indicate that the forest is being renewed. For areas surveyed for free-to-grow status between 1994 and 1999 approximately 85% of the area was declared satisfactorily regenerated.

TABLE 9. SUMMARY OF THE STATUS OF THE 2008 CARIBOU FOREST FMP OBJECTIVES

2008 FMP Objectives	2008 Targets (Summarized)	Auditor Comments
FOREST DIVERSITY OBJECTIVES		
Emulation of Natural Disturbance Patterns		
Objective 1a The "Frequency distribution of forest disturbances by size class should show movement towards the natural template."	To achieve 60-80% (4 out of 6) of the size classes of the planned new clearcuts by frequency moving towards the natural template at the year 2018.	In the FMP selected option just two of the six disturbance size classes are moving toward the natural disturbance template. However, given the constraints of the Caribou mosaic, past harvest history, First Nation values and finding a balance between all objectives and guideline requirements, we agree that progress is being made toward the emulation of natural disturbance patterns.
Provision of Wildlife Habitat		
Objective 2a "To maintain 10-20% of the forest which has the capability to produce marten, in suitable conditions as described in the Forest Management Guidelines for the Provision of Marten Habitat."	To maintain 10-20% of the capable forest in suitable conditions in core areas over the next 60 years.	Although there will be a reduction over the next 6 decades, suitable marten habitat will remain above guideline levels. The achievement of this objective will also be assessed in the Year 7 &10 Annual Reports.
Objective 2b "To maintain a continuous supply of suitable, mature, year-round habitat distributed both geographically and temporally across the	To maintain 50% of the Forest in a suitable condition within habitat tracts over the next 60 years.	The FMP identifies strategies that, based on current knowledge, are appropriate for achieving this target. The achievement of this

landscape in such a manner as to ensure permanent range occupancy of Woodland Caribou."		objective will be assessed in the Year 7 &10 Annual Reports.
Objective 5a "To ensure that forest management activities do not threaten the area of habitat for forest-dependant provincially and locally featured species."	To maintain a minimum number of hectares of habitat based on the lowest value in the natural benchmark SFMM run over the long term (100 years by species) (including protected areas) minus 20%.	Under the chosen scenario, the level of suitable habitat provision is essentially above the lower bound of natural variation for all species.
Objective 6a "To ensure that forest management activities do not threaten the critical breeding habitat for forest-dependant eagles, osprey, heron, and other forest raptors."	To maintain 90-100% compliance with Area of Concern prescriptions and conditions over time 15 (minor infractions), with zero moderate and significant infractions.	The achievement of this objective will be assessed by examining the future road density in Year 7 &10 Annual Reports.
Objective 7a "To ensure that forest management activities do not threaten habitat for forest dependant species at risk."	To maintain 50% of the Forest in a suitable condition within habitat tracts over the next 60 years.	The achievement of this target is directly related to target 2b.
Protection of Other Environmental Values		
Objective 4a "To provide for old growth forest ecosystems (as defined in the Old Growth Policy for Ontario's Crown Forests and the Old Growth Forest Definitions for Ontario) within the bounds of natural variation (BNV)."	To maintain at least a minimum amount of old growth forest units and to maintain at least a Minimum number of hectares of habitat for wildlife species that prefer old growth habitat for portions of their life.	The FMP management scenario projects that all but three Forest units will meet this requirement. The achievement of this objective will be assessed in the Year 7 &10 Annual Reports. Since this is a long term projection, assessment will be

		necessary on an ongoing basis.
Objective 4b "To maintain the amount of old growth red and white pine forests relative to amount on the management unit identified by the 1995 red and white pine conservation strategy."	No target.	In the FMP analysis of old Growth was measured through time and remains within the Bounds of Natural Variation.
Objective 8a "To minimize significant increases in road density on the management unit."	To limit road density to between 0.1 and 0.5 km of road/km^2 of forest.	The achievement of this objective will be assessed in the Year 7 &10 Annual Reports.
Objective 14a "To ensure that forest operations maintain compliance with prescriptions for the protection of water quality and fish habitat."	To maintain at least 90% compliance with Area of Concern prescriptions and conditions over time (minor infractions), with zero moderate and significant infractions.	The achievement of this objective will be assessed in the Year 7 &10 Annual Reports.
SOCIAL AND ECONOMIC OBJECTIVES **Protection of Non-timber Social and Economic Values**		
Objective 8b "To provide recreational opportunities to access the forest by maintaining road access on the management unit."	To maintain a minimum road density of 0.2 km of road open to the public per square km of forest for the ten year Plan.	The achievement of this objective will be assessed in the Year 7 &10 Annual Reports.
Objective 10a "To ensure that forest operations maintain compliance with	To maintain 90% compliance with Area of Concern prescriptions and conditions over time (minor	The achievement of this objective will be assessed in the Year 7 &10 Annual

prescriptions for the protection of natural resource features, land uses or values dependent on forest cover."	infractions), with zero moderate and significant infractions.	Reports.
Objective 11a "To ensure that forest operations maintain compliance with prescriptions for the protection of resource-based tourism values."	To maintain 90% compliance with Area of Concern prescriptions and conditions over time (minor infractions), with zero moderate and significant infractions.	The achievement of this objective will be assessed in the Year 7 &10 Annual Reports.
Objective 13a "To ensure that forest operations maintain compliance with management practices that prevent, minimize or mitigate site damage."	To maintain 90% compliance with Area of Concern prescriptions and conditions over time (minor infractions), with zero moderate and significant infractions.	The achievement of this objective will be assessed in the Year 7 &10 Annual Reports.
Objective 16 "To minimize non-compliance in forest operations."	To maintain 90-100% compliance with forest operations and Area of Concern prescriptions conditions over time (0-10% minor infractions), with zero moderate and significant infractions.	The achievement of this objective will be assessed in the Year 7 &10 Annual Reports.
Provision and Maintenance of Economic Benefits from Forestry		
Objective 12a "To provide a continuous supply of available harvest area (ha/year) over the long-term (and short term) (next 100 years)."	To maintain the 2008-2018 available harvest area levels by forest unit for the plan term (measured in 2008).	This objective will not be achieved by forest unit in the medium term.

Objective 12b "To provide a continuous supply of available harvest volume (m^3/year) over the long term (and short term) (next 100 years) for the six major species groups as identified in the regional wood supply strategies."	To maintain the 2008-2018 available harvest volumes for all species groups for the plan term (measured in 2008).	This objective will not be achieved by forest unit in the short, medium and long term. The projected decline in wood supply and the uneven flow over the long-term are both results of the trade-offs required to balance objectives under the umbrella of the Caribou mosaic.
Objective 12c "To increase the actual area harvested in comparison to the planned/ forecast (hectares by forest unit)."	To harvest at least 90% of the planned harvest area (including bypass) by forest unit for 2008-2013 and 2013-2018.	The achievement of this objective will be assessed in the Year 7 &10 Annual Reports.
Objective 12d "To increase the actual volume harvested in comparison to the planned/ forecast (volume by species group)."	To harvest at least 90% of the planned harvest area (including bypass) by forest unit for 2008-2013 and 2013-2018.	The achievement of this objective will be assessed in the Year 7 &10 Annual Reports.
Objective 12e "To better utilize the forecast harvest volume by mill."	To utilize 80% of the forecast harvest volume by mill from 2008-2018.	The achievement of this objective will be assessed in the Year 7 &10 Annual Reports.
Objective 15a "To maintain the managed Crown forest available for timber production."	To maintain at least 90% of the total Crown managed productive forest available for timber production as per FMP-1 over the period of the FMP with a short, medium and long-term desirable level of 483,000 ha.	The achievement of this target will be assessed when an updated planning inventory is prepared for the next FMP (2018).

Involvement of First Nations and the Local Citizens Committee *Objective 15b* "To provide opportunities for Aboriginal communities to be involved in plan development through Aboriginal consultation, planning team participation and incorporation of Aboriginal values." *Objective 15h* "To provide opportunities for the Local Citizens Committee (LCC) to be effective in plan development."	During the development of the FMP, provide Aboriginal communities with information, opportunity to participate, membership on the planning team, inclusion of Aboriginal values.	This target was achieved during the preparation of the 2008 FMP. The LCC was effectively involved in the development of the 2008 FMP.
SILVICULTURAL OBJECTIVES *Objective 3a* "To provide for a forest composition within the bounds of natural variation (BNV), while minimizing hardwood and maintaining/increasing the conifer composition." *Objective 3b* "To provide for a forest composition in the near and long term that maintains the distinctive dominance of conifer forest types while minimizing post harvest hardwood in-growth within conifer dominated forest units within the bounds of natural variation (BNV)."	To remain within the range defined by the natural benchmark SFMM run (specifically, the maximum value +20% and the minimum value -20%) over the long term (100 years). To remain within a range defined by the natural benchmark SFMM run (specifically, the maximum value +20% and the minimum value (-20%) over the long term (100 years).	The FMP target levels are within the bounds of natural variation. However, assessment of this objective involves very long term projections. It will be critical that good data are collected over time to document progress. The FMP target levels are within the bounds of natural variation. However, as in objective 3a, it will be critical that good data are collected over time to document progress toward this objective.

Objective 3c "To increase the presence of rare (infrequently occurring) tree species (e.g. red pine, white spruce) on the Forest."	To plant 10,000 seedlings of red pine and 50,000 seedlings of white spruce per year.	The achievement of this objective will be assessed in the year 7 &10 FMP Annual Reports.
Objective 3d "To maintain genetic diversity through the use of natural regeneration method where appropriate site conditions exist."	95-100% of forecast natural regeneration areas to be naturally regenerated during plan period (within 10 years).	The achievement of this objective will be assessed in the year 7 &10 FMP Annual Reports.
Objective 9a "To ensure harvested areas are successfully regenerated and free-growing in a timely manner."	To have a 95-100% successful regeneration rate.	The achievement of this objective will be assessed in the year 7 &10 FMP Annual Reports.
Objective 9b "To ensure harvested areas are successfully regenerated such that the hardwood component of stands is minimized and conifer composition maintained or increased."	5% or less of the harvested area that regenerates to a forest unit containing more hardwood than the original forest unit.	In Section 3.6.3 we have indicated our concerns regarding the maintenance of conifer as the dominant cover type and the reduction of hardwood composition within stands. The achievement of this objective will be assessed in the year 7 &10 FMP Annual Reports.

3.7.3. RPFO or Year Ten AR Assessment / Determination of Forest Sustainability

Forest sustainability must be assessed at the end of the five-year term of the 2002-2007 FMP, and a report on that assessment must be included in the Year 10 AR. This assessment of sustainability is based on;

- an examination of measurable indicators of the forest sustainability criteria,
- the collective assessment of objective achievement,
- the assessment of progress towards desired forest conditions and benefits.

Over time, actual values for each measurable indicator will be recorded in successive plan terms to enable the detection of forest sustainability trends. This analysis will enable the determination of:

- the direction in which the implementation of the selected management strategy is moving the indicator values; and
- whether or not implementation of the selected management strategy is moving the forest toward the desired future forest condition.

Twelve indicators of forest sustainability associated with five measureable sustainability criteria were reported on to discern trends.[30] Information related to some of the criteria was limited due to changes in reporting format between plan terms (i.e. forest unit descriptions), the limited scope of the assessment (i.e. comparisons made for only two terms meant that limited data was available to compare or assess), and the lack of benchmark targets for some criteria. For other criteria the underachievement of the harvest resulted in poor results (e.g. percent available harvest actually utilized, silvicultural expenditures). Our assessment of the achievement of indictors is provided in Section 3.7.5. Plausible explanations were provided when information was missing or in instances when target achievement did not meet expectations.

The report Author concluded that "*On balance forest management plan objectives are being achieved, and progress towards desired forest and benefits*

[30] Measureable indicators are; Managed Crown forest area available for timber production, landscape pattern or forest diversity indices, habitat for selected wildlife species, primary net productivity, water yield, total productive Crown Forest, ratio of area of riparian reserves to length of shoreline adjacent to timber harvest activity, percent of native communities in or adjacent to the management unit who are involved in the special native consultation option, % of AHA actually utilized, % of forecast silvicultural budget requirement actually received, Value added and LCC self-evaluation of their effectiveness.

has been made through the implementation of the forest management plan … and also reports … implementation of planned operations has provided for the sustainability of the Crown Forest."[31] Based on the information provided, we concur with this conclusion, with the caveat that the continued failure to achieve full utilization of the available harvest area over several management terms could adversely affect the achievement of the desired future forest condition.

3.7.4. Comparison and Trend Analysis of Planned vs. Actual Forest Operations Report

The Forest Manager is required to complete a "*Comparison and Trends Analysis Report of Planned vs. Actual Forest Operations Report*" as a requirement of the Independent Audit Process. The purpose of the report is to examine trends in planned vs. actual forest operations over time in order to provide a comparison of the current state of the Forest relative to its historic state.

The report was prepared in accordance with the requirements of Appendix C of the IFAPP and is included as an Appendix to this report (Appendix A). Initial problems required the submission of several versions of the text. It is noteworthy that a change in FMP table requirements and the use of a new base inventory between the 1997 and 2002 FMPs make the determination of trends more difficult.

The following general trends are reported:

- There has been an 8.7% reduction in the total land area of the Caribou Forest since 1997. This area reduction is attributed to changes in the classification of areas as managed and unmanaged land, land base reductions to the St. Raphael Waterway Park and changes associated with forest management data projections (Lambert to North American Datum 27).
- Increases in the Depleted/Recent Disturbance category since 2002 (28,886 ha vs. 69,827 ha) are attributed to required changes in categorization of land in the 2004 FMPM which resulted in a large proportion of the area classified as Barren and Scattered being re-classified as" recent disturbance" or "below regeneration standards".
- Actual harvest rates have not met planned levels historically on the Caribou Forest. During the 2002-2007 FMP term 61% of the planned harvest volume was realized. Volume utilization on the Caribou Forest has declined to 38% of the planned utilization levels due, in part, to the global and domestic downturn in the forest sector. A lack of markets for some hardwood products and materials has also contributed to the underachievement of harvest targets.

[31] Page 23, 2002-2007 Year Ten Report for the Caribou Forest. January 29, 2008.

- Changes to the forest land base and in forest unit definitions make the analysis of forest unit changes over the reported management periods more difficult. The managed Crown forest continues to be a conifer dominated (92.7%). The proportion of hardwood forest types has increased since 2007 (5.1%). The area of mixed conifer forest units (MC1 & MC2) has increased since 2002 from 96,083 hectares to 113,480 ha (2008-2018 term). Forest unit transitions are discussed in Section 3.4.4.
- The underachievement in planned harvest area has resulted in an underachievement of planned levels of silviculture (i.e. renewal, tending, site preparation, and spacing). Actual renewal levels achieved 42% of planned levels for the 1997-2002 term, 73% of planned for the 2002-2007 term and 69% of planned levels for the 2007-2008 CP term.
- The level of artificial renewal was higher than planned levels for the 2002 term and 2007-2009 due to efforts to address site factors, vegetative competition and to encourage a conifer dominated forest. For the 2007-2009 period actual natural renewal was approximately half of the planned level. In the 2002-2007 the area regenerated by natural renewal was at 46% of the planned level. The historic underachievement of natural renewal on the forest is discussed in Section 3.4.4.
- Spacing work has significantly underachieved planned levels largely as a result of the lack of suitable sites. During the 2002-2007 plan term spacing work achieved 60% of the plan target. No spacing work was planned or undertaken for the 2007-2008 or 2008-2009 periods.
- Mechanical site preparation levels were below planned levels for the terms reported reflecting the lower than planned harvest area.
- Areas surveyed for regeneration indicate that the forest is being renewed. For areas surveyed for free-to-grow status between 1994 and 1999, 85.4% of the area surveyed was declared satisfactorily regenerated.

We conclude that none of the reported trends indicate an immediate risk to forest sustainability.

3.7.5. Conclusions Regarding Sustainability of the Crown Forest

The assessment of forest sustainability includes an examination of measurable indicators of forest sustainability criteria, and an analysis of changes to forest and socio-economic conditions. At the management unit level, the FMPM has five measureable criteria (with twelve associated indicators) which are used as indicators of forest sustainability:

- Biodiversity.
- Forest Condition and Ecosystem Productivity.
- Soil and Water Conservation.
- Multiple Benefits to Society.
- Accepting Society's Responsibility for Sustainable Development.

It is difficult to assess sustainability as information related to the measureable indicators is limited at this time. Many of the indicators of forest sustainability could not be fully commented upon, due to the fact that only two management terms were being assessed. This made trends difficult to discern and as such, we have indicated partial achievement for two of the five criteria presented in Table 10. Other factors such as changes to forest unit definitions and changes in the selected wildlife species also complicated comparisons between FMP terms.

The partial achievement of a forest sustainability indicator does not imply a failure to meet an indicator, nor does it indicate that progress was not being made towards sustainability at the time of the assessment. Future forest sustainability assessments will be enhanced with the continued collection of data and the assessment of forest and socio-economic conditions over several plan terms.

TABLE 10. SUMMARY OF ACHIEVEMENT OF FOREST SUSTAINABILITY INDICATORS

Forest Sustainability Criteria	Met (yes/no/partial)	Audit Team Comments
Biodiversity	Partial	The implementation of the caribou strategy promotes the maintenance or enhancement of conifer dominated forest types in lieu of hardwoods. This forest condition is believed to be more reflective of the pre-industrial boreal landscape.

		The area of forest units and wildlife habitat remain within the bounds of natural variation determined in the preferred management scenario. The Analysis Package indicated that "*the long term management direction is capable of maintaining minimum levels of wildlife habitat for most species with minor exceptions*". In this report we identify concerns related to the definition of the bounds of natural variation. Additionally, FTG data may be indicative of an emerging trend where some pure conifer forest units are transitioning to mixed conifer forest units. The underutilization of the available harvest area has the effect of maintaining a greater abundance of older forest than forecast in the FMP documents. This predominance of older forest has implications related to the provision of wildlife habitat for species preferring a younger forest and will result in a decline in site productivity from a timber management perspective. Overall the average size of cutovers is decreasing.
Forest Condition and Ecological Productivity	Yes	Meaningful trends related to ecological productivity require that information be collected and assessed over several decades. Data are currently too limited to discern trends

		associated with many of the measurable indictors. Available information on forest disturbance within watersheds indicates that the area impacted by harvest is within acceptable limits to protect fisheries habitats. FMP objectives and targets are conducive to the maintenance of the desired forest condition. Our field inspections indicate that forest management activities were conducted in a manner that did not pose a threat to long term forest sustainability. The area renewed is generally in balance with the area harvested and operations in the field were well implemented. AbitibiBowater has implemented an effective monitoring program to assess renewal status, and monitor site productivity. Data to assess progress towards the natural frequency distribution of forest disturbance cannot be assessed as sufficient information is currently not available.
Soil and Water Conservation	Yes	The SGRs are conducive to the protection and maintenance of soil resources. Our site inspections indicated that forest management activities were implemented

		in accordance with the SGRs and the various forest management guidelines. A monitoring program is being implemented to assess the impacts of full tree logging on sensitive sites. Water resources are adequately protected through the AOC process. Initial data reported in the Year 10 AR indicates that productive area disturbed by forest management in second order watersheds is within an acceptable range. The ratio of area of riparian reserves to length of shoreline adjacent to timber harvest activity requires the establishment of a "target ratio" and could not be adequately assessed on the basis of two management terms.
Multiple Benefits to Society	Partial	The application of the caribou mosaic, more than any other factor, determines whether the desired forest and benefits can be achieved over time. The continued inability to achieve planned harvest levels and other harvest related objectives (i.e. clearcut block aggregate area) are the largest contributing factors to the current partial-achievement of the long term management direction.

		A chronic under-harvest is significant in that it will impact the achievement of the caribou strategy, is a lost economic opportunity and will present future problems for management as stands break up and transition to a younger age cohort. Significantly, the management opportunity to control stand composition for caribou habitat may also be lost as stands are by-passed due to operability constraints. The OMNR Socio-Economic Impact Model value added contribution to Northwestern Ontario projected a "total" value-added contribution of $144,001,667 and a direct value-added contribution of $62,655,619 based on forest management activities completed in the 2002-2007 term.
Accepting Society's Responsibility for Sustainable Development	Yes	First Nation participation in the forest management planning process was limited. The LCC statement of agreement with the 2008 FMP indicates it was involved in the planning for the Forest "*... but would prefer to even increase their involvement, in order to ensure that our forests are harvested in an efficient and sustainable fashion.*" The statement concludes with, "*The LCC membership supports the Caribou 2008- 2018 Forest Management Plan.*"

Sustainability Conclusion

Based on the findings of this audit, it is our opinion that the Caribou Forest is currently in a sustainable condition and is being managed sustainably as assessed through the IFAPP.

This conclusion is based on our findings that:

- The selected management alternative in the 2002 FMP, the long term management direction in the 2008 FMP and their related management objectives are consistent with the attainment of forest sustainability.
- Appropriate information was available to support forest management planning efforts.
- Forest management planning activities adhered to FMPM requirements.
- Appropriate silvicultural ground rules were adopted and the silvicultural treatment packages were appropriate for observed field conditions.
- Areas of Concern were appropriately protected through proper planning and management prescription implementation.
- Forest management activities (e.g. harvest, renewal, tending) adhered to FMP requirements and operations were implemented with minimal evidence of environmental degradation.
- Renewal operations are generally in balance with harvest operations.
- Free-to-grow assessments indicate that the forest is being renewed.
- Forest operations were compliant with the Crown Forest Sustainability Act (CFSA), Forest Management Plans and approved manuals.

We concluded that none of the findings in the "Comparison and Trend Analysis of Planned Versus Actual Forest Operations Report" pose a risk to forest sustainability in the near future. However, a number of emerging trends in combination with the historic under-achievement of planned harvest levels over several management terms are of concern, particularly in the context of the achievement of the desired future forest condition and the management of habitat for caribou.

Over the past three IFA audit terms harvest area achievement levels were 56% (1997-2002 term), 56% (2002-2007) and 43% (2007-2008) of planned. The management approach identified in the "*Guidelines for the Conservation of Woodland Caribou*" is for the harvest of large contiguous blocks to create extensive areas of caribou habitat. The inability to achieve planned harvest levels over a continuous period of 15 years suggests planned harvest targets are

overly optimistic given the remote location of the unit relative to processing facilities. As well, consideration must be given to the question of whether or not FMP objectives related to the implementation of the caribou mosaic strategy are attainable. The implications for the caribou strategy arising from the harvest shortfall may be exacerbated by other emerging trends such as the decline in harvest block sizes, and the transition of pure conifer forest units to conifer-dominated mixed forest units.

The current management plan implements the caribou mosaic over a 100 year period with designated mosaic blocks being harvested over 20 year periods. An initial assessment of progress on the 2008 FMP mosaic strategy is not scheduled to be reported upon until the Year 3 Annual Report (i.e. in the third year of plan implementation). Given the "threatened" species status of the Woodland Caribou, we recommend that an assessment of the viability of the 2008 caribou mosaic strategy be undertaken prior to the preparation of the Year 3 AR. This assessment should include the design and implementation of a program to monitor, assess and report on the effectiveness of the caribou mosaic strategy (and its related silvicultural and access management strategies) in achieving the long term management direction. OMNR and AbitibiBowater should collaborate on this assessment and on the design and delivery of the program.

Elements of the assessment should include an analysis of the impacts of varying levels of harvest on the FMP long term management direction, future wood supply and habitat supply for other featured wildlife species. The assessment should also provide forest managers with the capability to assess whether forest unit transitions or smaller harvest block sizes pose significant problems to the long term achievement of the caribou strategy. Results of the assessment should be used in an adaptive management process to inform and guide harvest scheduling for the remainder of the FMP term (i.e. Phase II planning of operations for the second five year term) and the design/redesign of the caribou mosaic in successive plan terms.

We recognize that the OMNR *Caribou Conservation Plan* released in April 2009, addresses concerns similar to those that we have raised. To avoid duplication, we suggest that if any aspects of our recommendation are to be dealt with by April 2012 (within three years) through the implementation of the *Caribou Conservation Plan* that they could be considered as an IFA Action Plan response.

Recommendation # 12:

AbitibiBowater and the OMNR District Office should undertake an assessment of the viability of the 2008 FMP caribou mosaic strategy, and its related silviculture and access management strategies, prior to the preparation of the Year 3 AR. Elements of this assessment should include an analysis of the impacts of varying levels of harvest on the achievement of the FMP long term management direction with respect to the provision of caribou habitat, future wood supply and habitat supply for other featured wildlife species.

3.8. Contractual Obligations

3.8.1. Sustainable Forest Licence

Table 11 provides a brief synopsis of the obligations contained in the licence and our assessment of how the Company carried out its obligations during the audit term.

TABLE 11. CONTRACTUAL OBLIGATIONS AND ASSESSMENT OF PERFORMANCE SFL # 542481.

Contractual Obligation	Obligation Attainment
The company must comply with the wood supply commitments specified in the SFL licence documents.	Appendix E has wood supply commitments to; • Longlac Wood Industries Inc. – in Longlac. • McKenzie Forest Products Inc. – in Hudson. • Ainsworth Lumber Company Ltd. – in Fort Frances. • Weyerhaeuser/Domtar pulp and paper mill in Dryden. Because of the current economic downturn in the forest sector, volume commitments were not fully realized due to mill shutdowns or curtailments.
The Minister may grant an Overlapping Licence.	BFPL held an Overlapping Licence on the Forest. It became insolvent during the audit term.
The SFL holder and all licencees must pay all Forestry Futures and Ontario Crown Charges.	As of March 31, 2009, AbitibiBowater and Overlapping Licencees were in arrears with respect to Forestry Futures and Ontario Crown Charges. During the preparation of this report we were informed that OMNR made financial arrangements to address trust accounts that were in arrears.

Prepare FMP, AWS, and other reports in accordance with the CFSA and the FMPM and abide by that FMP and all other requirements of the FMPM and CFSA.	All required reports were prepared. Not all reporting requirements were consistently met (i.e. report submission timelines, content).
Conduct inventories and surveys that are the responsibility of the SFL and carry them out in accordance with the FIM.	The FRI was updated for the preparation of the 2008 FMP in accordance with the FIM. Other surveys required for monitoring forest management activities were undertaken (e.g. FTG surveys, renewal assessments, etc.). There are no un-surveyed areas from planning terms prior to 1992 requiring free-to-grow assessments.
The SFL company shall not commit wasteful practices as described in the Forest Operations and Silviculture Manual or the Scaling manual.	There were few wasteful practice compliance issues during the audit term, and none were observed during the field audit. OMNR staff indicated that this was not an issue on the forest.
SFL conditions related to natural disturbance and salvage must be followed.	Salvage operations were not planned in the FMP but occurred during the audit term. SFL conditions related to the salvage cuts were followed.
The SFL company will participate in pest control programs in accordance with SFL conditions.	No pest control activities were undertaken.
Where land is withdrawn from the licence area the conditions in the SFL related to withdrawals shall be followed.	There were no withdrawals during the audit period.
Prepare an Audit Action Plan responding to audit recommendations within 2 months of receiving the final audit report. Implement the Action Plan. Prepare a Status Report within 2 years of approval of the Action Plan. Note: The Action Plan and Status Report are jointly prepared by the OMNR and SFL holder.	The 1999 – 2004 Independent Audit was submitted in April 2005. The required Action Plan was submitted in January 2006 and approved in June of that year, approximately 7 months late. The reasons provided for the delayed submission included the large number of recommendations (38) that required the involvement of the OMNR District, Region, Main Office and AbitibiBowater. It is our assessment that the amount of work and number of involved offices made the required 2 month submission timeline unrealistic; and that the actual 7 month submission date was acceptable, given the circumstances. The Status Report was submitted in June of 2008, within the required timeline.

The SFL company shall pay all renewal charges to the Forest Renewal Trust and comply with all terms of the Forest Renewal Trust Agreement.	As of March 31, 2009, AbitibiBowater was in arrears in its payments to the Forest Renewal Trust. During the preparation of this report we were informed that OMNR made financial arrangements to address trust accounts that were in arrears.
The Company can establish sub-accounts for the Management Unit Account and must provide the Minister with account details.	No sub-accounts were initiated during the audit period.
Maintain records and maps of eligible silviculture work implemented through payment from the Forest Renewal Trust account.	A 15% of sample of Renewal Trust Projects determined that maps were accurate and work was completed as invoiced.
Forest renewal charges will be analyzed and determined in accordance with SFL conditions. The analysis will be undertaken in conjunction with the term of the FMP.	An analysis of charges was completed.
The minimum balance must be maintained in the Forest Renewal Trust Account each March 31.	Minimum balances have been maintained in the Silviculture Trust account.
A silvicultural standards and assessment program must be implemented.	A silvicultural standards and assessment program is being implemented. Field monitoring activities include assessments of regeneration success, free-to-grow surveys, and assessments of vegetative competition. Assessments of the effectiveness of planned silvicultural operations are also undertaken (i.e. assessment of the effectiveness of tending treatments and site preparation, etc.).
The SFL company shall work co-operatively with local aboriginal communities to identify and implement ways of achieving more equal participation in the benefits provided through forest management planning.	There are 2 First Nation communities located within the Forest. Section 3.2.5 describes their participation in forest planning and provides an overview of Condition 34 reporting. AbitibiBowater made serious and repeated efforts to engage and increase Aboriginal participation in forest management. While there was limited success our assessment is that the Company has met the obligation.

The SFL company shall prepare a forest compliance plan in accordance with all standards established by OMNR.	A 5 year plan was contained in the FMP and Annual plans were contained in the AWSs. All were prepared in accordance with required standards.
The SFL company shall establish and deliver an internal compliance prevention/education program and provide for individual staff training to competency standards approved by the OMNR.	Our examination of company documents and interviews with staff indicated that an internal compliance educational program was in place and ongoing. Formal annual meetings were held with OMNR compliance staff.
The SFL company must conduct inspections of forest operations and deliver reports to OMNR in accordance with the company's approved compliance plan.	Inspection of FOIRs indicated there was an active inspection program suitable to the scale of operations on the Forest.
The Minister shall provide the Company notice of any lien claimant for eligible work on the licence area.	There were no liens during the audit term.
Where the SFL company undertakes activities on mining leases or claims, it assumes responsibility for all forestry activities in those areas. The OMNR will advise recorded and patented claim holders of the company's intent. The company will be available to discuss concerns or conflicts.	The OMNR provided notification to mining companies regarding AWS plans. There were no disputes recorded.

A Status Report detailing progress in implementing the various recommendations is to be prepared within 2 years following the approval of the Action Plan unless otherwise directed by the Minister. An interim status report was prepared and submitted in June 2007 and approved by the Regional Director in July 2007. The final Status Report was submitted in June of 2008, within the required timeline. Table 12 provides a summary of the 1999 – 2004 Recommendations, reported status of actions and our assessment of the results.

TABLE 12. SUMMARY OF THE 2004 IFA ACTION PLAN STATUS REPORT AND AUDITOR ASSESSMENT

	Recommendation	Status	Auditor Assessment
1.	The company should ensure that training is provided so that contractor employees are aware of SFM policies and legislation and that they understand how individual actions taken while working on the Caribou Forest contribute to the implementation of SFM.	The Companies EMS handbook has been distributed and follow-up internal audits have confirmed employee understanding. Overlapping licencees receive training.	SFI Certification confirmed there is an effective training program for all workers. The EMS program includes training for contractors. BFPL conducts training with its contractors. Our assessment is that workers on the Forest have an appreciation of the impact of their actions on forest sustainability.
2.	The plan author for the 2007-2017 FMP should ensure that any revisions to the Terms of Reference are properly documented and substantiated.	Work completed. The Terms of reference included a summary page outlining changes.	Completed.
3.	The planning team for the 2007-2017 FMP should develop a mechanism to record the names of planning team and LCC members who attend public information centers.	Completed.	Completed.
4.	The planning team for the 2007-2017 FMP should develop a more efficient system for documenting and tracking the receipt of public comments and provision of responses, and for reporting this information in an effective format.	Completed.	Completed.
5.	The planning team for the 2007 FMP should ensure that the 2007-2017 FMP contains the required text related to wildlife in the Management Unit Description section of the Plan.	Completed.	Completed. Appropriate text is included in the 2007 and 2008 Plans.

6.	Corrected versions of tables FMP-3, FMP-4, FMP-5 and FMP-13 should be incorporated into the 2002 FMP as an amendment.	Amendment completed and approved in November, 2005.	Completed.
7.	During the preparation of the 2007 FMP, the OMNR in collaboration with the Company should assess whether a more flexible application of the caribou guidelines can mitigate the planned declines in harvest volume and the availability of old forest for caribou habitat.	The 2008- 2018 Caribou mosaic included the investigation of different options to address caribou requirements while balancing social, economic and environmental considerations.	Our assessment is that the Planning teams reviewed the full range of options for the 2007 and 2008 Plans and selected the one best suited for the Caribou Forest at that point in time.
8.	The company should assemble the best available information to verify the effectiveness of natural regeneration treatments on the SPU, MC1 and MC2 forest units on the Caribou Forest. In collaboration with the OMNR, this information should be assembled and analyzed to assess the accuracy of assumptions related to the projection of the future forest condition on the Caribou Forest. Results of the analysis should be used to assess and, if necessary, prepare revised silvicultural strategies for the 2007-2017 FMP.	*Actions:* 1 An assessment was completed that indicated that natural regeneration was effective in regenerating those forest units. Results were shared with the OMNR. Survey results show 74% FTG. 2. OMNR SEM program results were reviewed and showed treatments were successful in terms of stocking. 3. The level of natural vs. artificial was monitored. In the 2008 FMP zero hectares of extensive treatments were forecast for the SPU and MC1 forest units in the SFMM model. Very little extensive silviculture was	Our assessment is that silvicultural strategies are appropriate. Additional monitoring is required over the long term to assess the effectiveness of the FMP in achieving caribou habitat objectives. SEM field data indicates forest unit transitions are occurring. The SEM program also noted that when the correct SGR was applied the desired FU was achieved on 51% of the area treated. Stands treated with an acceptable alternative did not achieve the desired FU because of stand conversion and the ingress of natural

		forecast in SFMM of the MC2 forest unit. 4. Review of Annual Reports was undertaken.	regeneration.
9.	The Company should develop and implement measures to improve the coordination between operational planning and implementation of its silvicultural strategies by March 31, 2006. These measures should ensure that operational activities are better coordinated with the AWS and that staff are fully aware of the management history of all sites where silvicultural operations are being conducted.	In June 2005, AbitibiBowater adopted a new organizational structure to integrate planning, harvest and silviculture. Procedures were implemented to minimize the possibility of conducting operations in areas not in the FMP or AWS. A silviculture contractor has been dedicated to provide on-site guidance to site preparation operators.	Compliance results and interviews with OMNR and Company staff indicate the problem has been effectively addressed.
10.	OMNR should ensure that updated compliance objectives for the Caribou Forest are incorporated annually into the District ACOP.	This is now being completed annually. The ACOPs reflects district priorities. Copies of the ACOP have been given to area foresters and technicians.	The ACOP priorities reflect realistic District priorities. They include an extra summary page that provides an assessment of the previous year's results. Our assessment is that this recommendation has been effectively addressed.
11.	OMNR should develop meaningful compliance targets for inclusion in future ACOPs.	Forestry portion of the district ACOP have been incorporated into the district ACOP since 2006-2007	Our review of the ACOPs revealed that compliance targets are being realistically predicted and

		and will be completed annually.	assigned.
12.	The Company should include a Monitoring Inspection Reporting Schedule and an expanded discussion of compliance history in future Annual Forest Compliance Plans.	With the 2006-2007 plan the Company has been including an expanded discussion.	An activity schedule is contained in the ACOP and the discussion in the report is comprehensive.
13.	The OMNR should take measures to ensure that required alterations relating to the manipulation of forest cover are certified by a R.P.F.	Completed.	Completed.
14.	The Company should conduct an analysis of amendment requests (outstanding as of March 31, 2004) to identify deficiencies in planning and take measures to improve their performance in this regard.	A review of amendment request was completed and submitted to OMNR. Actions were identified to reduce future requests. Discussions and ongoing refinements are ongoing.	We noted major improvement in the quality of amendment requests and efficiency in processing them between the first two years (2004-2006) and the last three years (2006-2009) of the audit period. Time from submission to approval decreased from 5 months to 1 month.
15.	The Company should review the status of all outstanding amendment requests (as of March 31, 2004) and indicate to the OMNR whether or not they are still required. Bowater must submit adequate documentation and rationale for all outstanding amendment requests or withdraw them by June 1, 2005.	Completed.	Our assessment is that the OMNR and Company are sensitive to the issue and working collaboratively to minimize requests.
16.	The Sioux Lookout District Manager must ensure that OMNR completes a review of outstanding amendment requests by August 1, 2005.	Completed.	Completed by January 31, 2006.

17.	OMNR must commit the resources necessary to ensure the timely review of FMP amendment requests on an ongoing basis.	The OMNR and the LCC have developed a protocol so the OMNR can proceed with administrative amendments prior to LCC review. The quality of Company requests has increased and District approval timelines are consistent with other OMNR Districts.	We noted major improvement in the quality of amendment requests and efficiency in processing them between the first two years (2004-2006) and the last three years (2006-2009) of the audit period. Time from submission to approval decreased from 5 months to 1 month.
18.	OMNR should assign responsibility for amendment and plan upkeep at all required locations and should take immediate steps to ensure that required FMP amendment documentation is present at all locations as required by the FMPM.	The provision of amendments to appropriate locations is now occurring.	Amendment files were available at the AbitibiBowater and OMNR offices in Sioux Lookout. Our review of the OMNR's documentation found that the quality, completeness and timeless of amendment records was excellent.
19.	Corporate OMNR should make strong representation to MOE to address the outstanding bump-up requests and work with the MOE to develop mechanisms to improve the efficiency of the bump-up review process so that timely decisions can be rendered.	Completed.	Our assessment is that this is a long standing and recurring problem that is well understood by OMNR. Corporate OMNR has been working with MOE to streamline the process.
20.	The Company should take immediate measures to ensure that future AWS submissions are complete, accurate and submitted on time.	AWS preparation by the Company has been reviewed and adjustments made to address the problems.	Our review of the OMNR AWS filing system showed that FMPM procedural requirements including

		AWS quality and timeliness has improved.	consultation were met. The quality of Company revision requests and OMNR efficiency in processing them showed substantial improvement over the audit term.
21.	OMNR, Bowater and BFPL should jointly undertake a detailed review of why the actual harvest during the audit period has been well below planned levels and evaluate the appropriateness of the AHA and planned harvest level. This review should be completed so that it is available at the Third Stage Information Center (Review of proposed Operations) for the 2007-2017) FMP.	A detailed review did not take place due to other work priorities (2007 Contingency Plan). OMNR conducted a review of past utilization to update information for the FMP. Contributing factors that reduce harvest levels include timing restrictions in AOC that result in winter harvesting, First Nation access concerns, the economy and Company downsizing. If underutilization continues during the implementation of the 2008 FMP then Bowater and the OMNR will review the situation.	This issue was a concern for us. It is discussed in Sections 3.4.3 and 3.7.5. of this report. The Company indicated to us that; - there is an uncertain future where government and Company initiatives such as biofuel may require the full AHA. - A number of initiatives were implemented to move towards greater utilization of available volumes during the 2002-2007 term. These included the addition of a second harvest contractor and the construction of a hardwood processing facility at the Hudson sawmill site; and. increased demand for hardwood across northwestern Ontario.

			The economic downturn and the resultant poor markets for forest products in the latter part of the audit term has significantly reduced harvest levels.
22.	The Company should ensure that its slash pile burning program covers the recently created backlog of slash piles.	Slash pile burning did not start until 2007-2008 when some backlogged area were burnt. The 2008 FMP states that slash will be piled and burned.	Slash remains an issue and is discussed in Section 3.4.4.
23.	The Company should review the results of its vegetation management needs surveys, and ensure that sites requiring release are included in future AWS and that the appropriate treatments are implemented within the 2002-2007 planning period.	Annual surveys are conducted and the information used to identify areas requiring release in the AWS. In the past some areas proposed for treatment were not completed due to First Nation concerns, weather, accessibility, and flying conditions.	Proposed treatments are in the AWS. Actual achievement was below planned levels due to a lack of suitable sites. Our field assessment indicated that where treatments were required they were well done.
24.	The Company should identify and implement appropriate water-crossing maintenance strategies.	A water crossing maintenance strategy was developed and evidence provided to OMNR. Road maintenance and monitoring strategies were developed for the 2007 Contingency plan and the 2008 FMP.	Our field visits, interviews and review of compliance records indicates that water crossing issues have been resolved.

25.	The Company should review its cross-drainage installation program to improve the planning, installation and maintenance of cross-drainage culverts. The Company should involve its contractors and others who install cross-drainage culverts on the Forest in this review.	Cross- drainage training is covered in work instructions and training materials provided to operators. The EMS system contains a database of trained personnel. Cross-drains are monitored as part of the Company roads monitoring program.	Planning and training requirements were met. However, field monitoring and maintenance remain an issue and are discussed in Section 3.4.7.
26.	The OMNR should assign sufficient human resources to the Caribou Forest to ensure the timely performance of forestry-related duties, including review and approval of annual reports, FMP amendments, annual work schedules and AWS revisions.	OMNR shifted staff priorities and made an effort to address the timely completion of forest management duties. A new Planning and Information team was developed to expedite the completion of forest related duties.	Reports and other duties are now being completed in a timely manner.
27.	The Company should dedicate the efforts of a senior manger to the resolution of documentation and quality control issues on the Caribou Forest.	A Forestry Services manager was assigned responsibility for documentation and quality control issues.	Our assessment is that the Company has an effective documentation and quality control system in place. We do have some long term concerns about the contracting of document preparation to consultants. The issue is discussed in Section 3.5.1.

28.	The OMNR should conduct a higher frequency of "spot-check" inspections to identify potential issues prior to completion of operations.	The OMNR developed a process that placed higher priority on compliance schedules, high priority operational areas where compliance issues might arise, and where spot checks should occur.	Our assessment is that potential issues are being addressed in a proactive manner.
29.	OMNR, Bowater and Buchanan Forest Products should conduct a higher frequency of inspections where remote tourism AOCs are in place.	Company personnel meet annually prior to the implementation of the AWS to discuss potential AOC concerns related to planned operations. OMNR committed to inspecting 100% of all harvest blocks with tourism related AOCs.	Completed and ongoing. Compliance records indicate there are no major issues.
30.	OMNR, Bowater and Buchanan Forest products should conduct more joint inspections and/or re-institute periodic meetings to discuss compliance interpretations, emerging compliance issues and trends.	Ongoing.	Ongoing.
31.	OMNR, Bowater and Buchanan Forest Products should develop and implement strategies to achieve full compliance with the Guidelines for Forest Industry Compliance and the FIM in handling of FOIR reports.	The guidelines were reviewed by all parties and areas of confusion were clarified. The Compliance Strategy and ACOPs outlined requirements and how they are to be achieved. Only certified compliance	Our investigations indicated that guidelines are being followed and submission of FOIR reports adhere to OMNR standards.

		inspector will conduct compliance inspections.	
32.	The Company and OMNR should ensure that by September 1, 2005 all of the ARs covering the five years of the audit period have been accepted. Both parties should commit to fixing the AR process so that it functions as intended in the future. If either organization requires additional resources for this to happen, appropriate steps should be taken to obtain the required resources.	Completed.	Over the audit term report quality and timeliness of reporting has improved. However, problems still persist with respect to the timely submission and initial quality of reports. Discussed in Section 3.5.1.
33.	The Company should raise the quality of its initial Annual Report submissions to an acceptable standard that meets the requirements of the FIM and part E of the 2004 FMP.	Three action items were identified; OMNR and the Company were to ensure a joint understanding of requirements and expectations. Completed. The Company was to undertake a review of practices related to the production of ARs to determine issues related to the production of ARs which needed to be addressed to meet manual requirements. Completed. The Company was to submit ARs in accordance with manual requirements.	Problems still persist with respect to the initial quality of reports and the timeliness of report submissions. A recommendation is provided.
34.	The OMNR District Manager should ensure that the required review timelines for comments and	Completed.	OMNR review and response time has improved

	responses to submitted ARs are met. It is also recommended that OMNR conduct a preliminary review of submitted ARs immediately after their receipt to determine whether major deficiencies are present - if they are, the AR should be returned promptly to the Company with a brief explanatory note.		significantly over the audit term. The requirement is met.
35.	As soon as possible, the company should complete and submit the Report of Past Operations required during the development of the 2007 FMP, and it should meet all the required standards.	Completed.	Completed.
36.	The Company should identify remaining unsurveyed areas from planning terms prior to 1992 and schedule these areas for free-to-grow assessments.	Completed.	Completed. There are no un-surveyed areas from planning terms prior to 1992 requiring free-to-grow assessments.
37.	The Company and the OMNR should ensure that the status report on this audit's recommendations is produced and submitted on schedule.	Completed.	Completed.
38.	The Audit Team recommends extension of the Caribou Forest SFL contingent upon Bowater Canadian Forest Products Inc. and Sioux lookout District OMNR fully implementing all of the following recommendations by September 1, 2005; # 6. #14, # 15, # 32 and # 35. If this condition is not met, the licence should not be extended.	Completed.	Completed. The licence was extended.

3.8.2. Concluding Recommendation

Recommendation # 13:

The audit team concludes that management of the Caribou Forest was generally in compliance with the legislation, regulations and policies that were in effect during the term covered by the audit, and the Forest was managed in compliance with the terms and conditions of the Sustainable Licence held by AbitibiBowater (formally known as Bowater Canadian Forest Products Inc.). Forest sustainability is being achieved, as assessed through the Independent Forest Audit Process and Protocol. The audit team recommends the Minister extend the term of Sustainable Forest Licence # 54248 for a further five years.

4.0. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

Twelve recommendations are made to address the issues identified during this audit.

Commitment

IFAPP requirements with respect to the development of corporate directions and commitments to forest and ecosystem sustainability, communications and training have been met.

OMNR also met all IFAPP requirements with respect to corporate directions and training related to forest sustainability.

AbitibiBowater and OMNR District staff had a good understanding of their respective corporate directions and demonstrated that in carrying out their duties.

Public Consultation and Aboriginal Involvement

Public participation in the 2008 FMP planning process met the requirements of the FMPM.

All requirements with respect to First Nation consultations and efforts to involve them in forest management were met. Attempts to involve Aboriginal individuals on the planning team had limited success. The OMNR and AbitibiBowater made ongoing and determined efforts to involve FNs in forest planning and forest business activities. This involved the provision of funding, training and awarding of business contracts.

The LCC was properly established and was involved in the preparation of the FMP. It was actively involved in the implementation of the 2002, 2007 and 2008 plans. OMNR and AbitibiBowater were supportive of the LCC and its role. LCC members felt their input to forest planning and operations had productive results.

Forest Management Planning

The 2008 FMP planning process was in accordance with FMPM requirements.

The FMPM requirements for the establishment of the long-term management direction were met.

The implementation of the caribou mosaic dominated all aspects of the planning process and had an over-riding influence on the SFMM modeling results. Assumptions used to develop the SFMM inputs for land base definition, forest dynamics and silvicultural options were reasonable and were based on the best available information. However, we did find that documentation of the rationale for the proposed management strategy, the descriptions of the natural benchmark scenario and the various scoping investigations was limited in both the FMP text and the Analysis Package. This limited discussion and analysis of model outcomes, often made it unclear how and why conclusions with respect to final model inputs were made.

Operational planning met FMPM requirements.

Plan Assessment and Implementation

The 2008 FMP caribou mosaic is a re-design of the 2002 caribou mosaic into what was believed to be a more effective caribou habitat configuration. The spatial arrangement of harvest blocks was based on a caribou mosaic habitat strategy which included cutting and deferring larger blocks, protecting key calving lakes, providing linkages to habitat concentrations, and renewing the Forest to ensure the dominant conifer composition persists and the hardwood composition decreases.

The implementation of the Forest Management Plan during the audit period was in compliance with FMPM requirements. The area renewed was generally in balance with the area harvested, AOCs were properly planned and implemented, silvicultural operations were largely compliant with regulations and guidelines.

However, we did identify several concerns with the forest management program:

- The underachievement in planned harvest area has resulted in an underachievement of planned levels of silviculture (i.e. renewal, tending, site preparation, and spacing).
- A transition from pure conifer forest units to mixed conifer units is occurring (Spruce Pure Upland, Spruce Pure Lowland and Pure Jack Pine to Mixed Conifer (MC1, MC2).
- There is a need to assess spacing during planting operations in order to control stand densities.
- AbitibiBowater should consider utilizing other approaches to augment its current silvicultural strategies and practices for site preparation and the control of competing hardwoods (i.e. use of hydraulic site preparation equipment, the topping of hardwood trees, etc). On-going monitoring and timely tending is required to ensure that the objectives of the caribou strategy related to conifer composition are achieved.
- We did observe incidences of localized rutting, and areas where productive forest land had been lost due to chipper debris and logging slash.
- Our field investigations revealed that cross drainage installation and maintenance remains a problem.

System Support

OMNR and AbitibiBowater staff are knowledgeable, and demonstrated a commitment to forest sustainability. Both organizations had effective training programs, and information management and record control systems.

We identify a concern with respect to the quality and timing of report submissions.

Monitoring

Both the OMNR and AbitibiBowater are effectively tracking and monitoring forest management activities on the Caribou Forest. From an operations standpoint the Forest has a good compliance record and we found that compliance plans were appropriately prepared. The level of compliance inspections was appropriate to the level of forest management activity.

We identified three issues;

1. The quality of some forest management reports (e.g. Annual Reports) requires improvement to meet FMPM requirements.
2. OMNR free-to-grow survey data does not fully correlate with data collected by AbitibiBowater. We believe that AbitibiBowater and the

OMNR should assess the current free-to-grow survey data collection and assessment procedures to determine if all information needs and requirements to monitor the application of the caribou strategy are being satisfactorily met.

3. There is a need to track and evaluate the effectiveness of the FMP caribou mosaic strategy and its related silvicultural and access strategies.

Achievement of the Management Objectives and Forest Sustainability

It was difficult to assess sustainability as information related to the measureable indicators is limited. Many of the indicators of forest sustainability could not be fully commented upon, due to forest unit changes, management unit boundary changes, changes in forest management direction and different FMPM planning and reporting requirements for the terms being assessed. This made trends difficult to discern. However, on the basis of the findings of this audit, it is our opinion that the Caribou Forest is presently in a sustainable condition.

We do have concerns related to the underachievement of the planned harvest. The related inability to fully implement the caribou mosaic strategy poses a risk to the achievement of FMP objectives. The uncertainty with respect to the implications of forest unit transitions and the overall effectiveness of the caribou mosaic strategy requires an assessment of the viability of planned harvest levels and that a long term monitoring strategy to assess the effectiveness of the mosaic strategy.

Other sustainability issues include;

- An apparent trend with respect to a transition from pure conifer forest units to mixed conifer forest units which may be contrary to FMP objectives and creation of quality caribou habitat.
- Potential losses of productive forest land arising from the lack of slash and debris management.
- Forest industry insolvencies could negatively affect the delivery of silviculture and other forest management responsibilities.

Contractual Obligations

Contractual obligations were largely met with a few notable exceptions. As a result of the current economic downturn volume commitments were not fully realized due to mill shutdowns or curtailments.

As of March 31, 2009, AbitibiBowater and BFPL were in arrears with respect to Forestry Futures and Ontario Crown Charges and Forest Renewal Trust Account payments. During the preparation of this report we were informed that OMNR had made financial arrangements to address trust accounts that were in arrears.

The issue of forest industry insolvencies on the unit could potentially result in problems for the delivery of silviculture and other forest management activities. District OMNR in collaboration with AbitibiBowater should develop and implement a strategy to address forest management and/or compliance obligations associated with the BFPL commitment area.

Summary of Recommendations

Table 13 provides a summary of the recommendations made to AbitibiBowater and the Sioux Lookout District OMNR. No recommendations were directed to Corporate OMNR.

TABLE 13. SUMMARY OF THE AUDIT RECOMMENDATIONS TO ABITIBIBOWATER AND/OR OMNR SIOUX LOOKOUT DISTRICT

Principle 1: Commitment
No recommendations are provided.
Principle 2: Public Participation
No recommendations are provided.
Principle 3: Forest Management Planning
Recommendation # 1: AbitibiBowater should ensure that the natural benchmark run and bounds of natural variation are clearly defined and documented in the next FMP. **Recommendation # 2:** AbitibiBowater should ensure that the FMP text and Analysis Package clearly documents the methodology and rationale for all modeling inputs in the next FMP.
Principle 4: Plan Implementation
Recommendation # 3: AbitibiBowater should amend FMP- 4 (2008 FMP) to remove the area of managed reserve (unavailable area) from the available area total.

Recommendation # 4

District OMNR, in collaboration with AbitibiBowater, should develop and implement a strategy to address forest management and/or compliance obligations associated with the BFPL commitment area.

Recommendation # 5:

AbitibiBowater should implement a program to address slash and debris associated with past (where it is cost effective and practical) and on-going operations.

Recommendation # 6:

AbitibiBowater should improve its cross drainage culvert installation, maintenance and monitoring program.

Principle 5: Systems Support

Recommendation # 7:

AbitibiBowater needs to ensure it has sufficient document quality control procedures to improve the initial quality of forest management reports.

Principle 6: Monitoring

Recommendation # 8:

AbitibiBowater and the OMNR should standardize free-to-grow survey data collection and assessment procedures.

Recommendation # 9:

AbitibiBowater and the OMNR should review the FTG survey data collaboratively to determine post renewal succession rules for the development of the next FMP.

Recommendation # 10:

AbitibiBowater should monitor stand development and implement appropriate silvicultural practices to ensure stand composition objectives are achieved.

Recommendation # 11:

AbitibiBowater must ensure that all FMPM reporting requirements for Annual Reports are met.

Principle 7: Achievement of Management Objectives and Forest Sustainability
Recommendation # 12: AbitibiBowater and the OMNR District Office should undertake an assessment of the viability of the 2008 FMP caribou mosaic strategy, and its related silviculture and access management strategies, prior to the preparation of the Year 3 AR. Elements of this assessment should include an analysis of the impacts of varying levels of harvest on the achievement of the FMP long term management direction with respect to the provision of caribou habitat, future wood supply and habitat supply for other featured wildlife species.
Principle 8: Contractual Obligations
No recommendations are provided.
Summary of Conclusions and Recommendations
Recommendation # 13: The audit team concludes that management of the Caribou Forest was generally in compliance with the legislation, regulations and policies that were in effect during the term covered by the audit, and the Forest was managed in compliance with the terms and conditions of the Sustainable Licence held by AbitibiBowater (formally known as Bowater Canadian Forest Products Inc.). Forest sustainability is being achieved, as assessed through the Independent Forest Audit Process and Protocol. The audit team recommends the Minister extend the term of Sustainable Forest Licence # 54248 for a further five years.

Appendix A

Comparison and Trend Analysis of Planned vs. Actual Forest Operations Report

The Comparison and Trend Analysis of Planned vs. Actual Forest Operations is prepared by the Forest Manager (AbitibiBowater) responsible for forest management on the Caribou Forest. We included in this report without modification or adjustment.

Comparison and Trend Analysis of Planned Versus Actual Forest Operation Report

for the

Caribou Forest Sustainable License Area

As Required by the Independent Forest Audit Protocol 2008-2009

Prepared by:

Tom Ratz, R.P.F.

Signature:

Date: MAY 6/2009

Comparison and Trend Analysis of Planned Versus Actual Forest Operations Report for the Caribou Sustainable Forest Licence Area

Introduction

The preparation of a comparison and trend analysis report is a requirement of the Independent Forest Audit Protocol for the conduct of the Caribou Forest audit covering the five-year period April 1, 2004 – March 31, 2009. This comparison and trend analysis report covers the following planning periods.

Past plan: April 1, 1997 – March 31, 2002
Past plan: April 1, 2002 – March 31, 2007
Contingency plan: April 1, 2007 – March 31, 2008

It should be noted that data from the first term of the April 1, 2008 – March 31, 2018 **current** FMP has been included in this report. This was done so that better comparisons could be made to actual data that is currently available and to avoid any reporting-gaps in future Independent Forest Audits.

Tables 3 and 4 of the comparison and trend analysis report are volume and area based tables derived from annual reports. The reader of this report should be cautioned that 2007-08 actual figures were compiled with data from draft annual reports that have not been approved by the Ontario Ministry of Natural Resources (OMNR) and are subject to change pending final review.

History of Licensing

Abitibibowater Inc. and its predecessors (Bowater Canadian Forest Products, Great Lakes Paper, Great Lakes Forest Products, Canadian Pacific Forest Products and Avenor Inc.) have held a licence for the an area north of the CN mainline since 1957. Although the original licence was dated 1957 actual development on the licence area began only as a result of mill expansion in the late 1970's. In 1964, an amended area was licenced in two parcels, and on April 1, 1983, separate licences were issued to the company for Caribou West Management Unit and Caribou East Management Unit.

The following summary gives the licence history of the Caribou East and West land base.

1957: Licence D-1697 issued, including part of the Caribou East.
1963: Licence D-2058 issued, combining several parcels, including D-1697.
1964: Licence D-2390 issued, to include the area west of D-2058 which was amended to delete 900 square miles near Armstrong.
1971: Licence D-2058 re-issued as 328100 and D-2390 as 328200.
1983: Licence 460600 issued, covering all of Caribou East.
1983: Licence 328200 issued, covering all of the Caribou West.

1996: Licence 542186 issued, covering all of the Caribou East for 1996-97.
Licence 542037 issued, covering all of the Caribou West for 1996-97.

1997: Sustainable Forest Licence 542 481 covering the amalgamated Caribou Forest April 1, 1997.

In 1995, Wabakimi Provincial Park was proposed for expansion after the OMNR accepted a new proposed park boundary, submitted by the Wabakimi Park Boundary Review Committee. As a result, the Caribou East Management Unit's land base was reduced by approximately two thirds of its former area. Because of the significant land base reduction, the OMNR and Bowater began work in 1996 to add the western portion of the remaining Caribou East Management Unit to the adjacent Caribou West Management Unit. This single management unit was of the size and configuration that was practical to manage on a long-term sustainable basis. The amalgamation took effect on April 1, 1997. A small portion of the former Caribou East Forest lying east of the expanded Wabakimi Park was amalgamated with the Black Sturgeon Forest.

The Sioux Lookout District of the Ministry of Natural Resources, Northwest Region, administers the entire Caribou Forest Licence (1997).

History of Forest Management Planning

Prior to 1996, and the signing of Sustainable Forest Licences, the Caribou forests were operated as Company Management Units. Abitibibowater Inc. was responsible for planning and implementing access and harvesting operations, while the OMNR was responsible for planning and implementing renewal and maintenance, renewal support, compliance and renewal assessment aspects of forest management. After 1996 Abitibibowater Inc. became responsible for all forest management activities. Preparation of Timber Management Plans and Forest Management Plans for the period of this comparison and trend analysis report was the responsibility of Abitibibowater Inc.

Summary of Total Land Area

Table 1 shows that there have been changes to the managed Caribou Forest land base have occurred during the period of this trend analysis report.

Changes in total land area between 1997-2002 and 2002-2007 can be attributed to three factors:

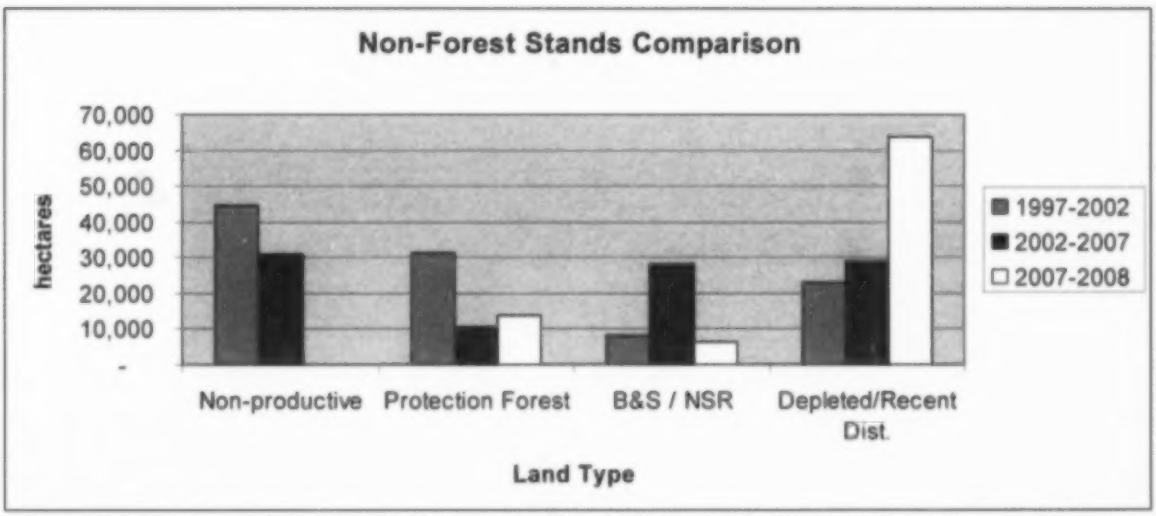
- a land base reduction as a consequence of the introduction of the St. Raphael Waterway Park,
- changes in the classification of areas as managed and unmanaged between the two terms,
- a change in projection from Lambert to North American Datum 27

The combination of these factors resulted in a reduction of the total land area of the Caribou Forest by **8.7%** between 1997 and 2007.

Important to forest management, and the development of future direction in subsequent forest management plans, is an assessment of changes in working group representation over for the three terms. However, the 2004 Forest Management Planning Manual (FMPM) changed the requirement for the FMP-2 breakdown from working group to provincial forest unit. Therefore direct comparisons between the 2007-08 term and the two previous terms is not directly possible. However, Table 1 shows that the area of jack pine working group was reduced from 106,030 ha to 61,502 ha between the 1997 and 2002 terms. Additionally, the PJK provincial forest type for the 2007-08 current term represents only 42,353 ha.

Of particular note from Table 1 are the figures associated with the land type categories of Non-Productive B&S/ NSR and Depleted over time. The table does not include a figure for "non-productive" in the 2007-2008 term. This was due to a change in which the land classifications changed in the new 2004 FMPM and the area was actually included in the Crown Other land type, which is not part of Table 1.

The increase in the B&S / NSR category between the 1997-2002 and the 2002-2007 are a consequence of the implementation of a new base inventory for the 2002-2007 term. Area identified as FTG in the 1997-2002 term under the older Lambert inventory were not used to update the new base inventory of 1996. The result is an area figure of B&S / NSR larger then would be expected. Photo interpreters would have experienced difficulty in applying forest typing to the younger regenerating stands and applied the B&S / NSR label to these areas. The transfer of FTG information from the old Lambert inventory to the new NAD inventory has alleviated this anomaly in the planning inventory for the 2007-08 planning term.



The increase in the Depleted/Recent Disturbance category between 2002-2007 and 2007-2008 (28,886 vs. 63,936 respectively) is comprised of natural disturbance or recently harvested area that has not been updated with new stand information based on either inventory update or free-to-grow survey). Again this is due to the change in the classification requirements in the new 2004 FMPM. Based on the changes, a large proportion of the area classed as B&S in 2002 is more accurately classed as 'recent disturbance' in the 2007-08 term. The remaining area deemed 'below regeneration standards' describes those areas that

are truly low stocked as a result of site limitation (i.e. true B&S).

In the 2002-2007 term B&S comprised 28,052 hectares and the Depleted comprised 28,886 hectares totaling 56,934 hectares. In the 2007-08 term the Recent Disturbance area is 63,936 hectares and the Below Regeneration Standards area is 6,207 hectares totaling 70,143 hectares. The additional 13,205 hectares corresponds inversely with most of the area classed as 'Forest Stands' which has decreased from 409,385 ha in 2002 to 400,173 ha in 2007 (a difference of 9,212 ha).

Inventory Updates for Forest Management Planning

The FRI used for the preparation of the 1997-2017 plan used a base inventory of 1976 inventory year with updates for depletions (harvest and natural), the addition of areas declared Free-To-Grow (FTG), and the aging of the forest stands to the start of the forest management planning term.

The FRI used in the development of the 2002-2022 Forest Management Plan consisted of a new base inventory of 1996 updated to the year 2002 with updates for actual harvest and natural depletions (wildfire and windthrow) between 1996 and 2002. In addition all harvest allocations included in the 1997-2002 (which had not yet occurred) were assumed to have taken place and were termed "hypothetical" depletions. Removing both the actual and "hypothetical" depletions from the base inventory and aging the forest stands by 6 years results in an inventory updated to 2002.

The planning inventory in the development of the 2007-2008 Contingency Plan Forest Management Plan was based on the 2002 inventory and updated to reflect actual harvest and natural depletions between 2002 and 2007. Additionally, accruals (FTG surveys) that were collected prior to 1996 were used to update inventory stands that were less than 20 years old as it was felt that the surveys would provide better information than the interpreted attributes. Again, all harvest allocations included in the 2002-2002 (which had not yet occurred) were assumed to have taken place and were termed "hypothetical" depletions.

Forest Unit Changes Over Time

Table 2 shows the various forest unit descriptions used for the past three terms. The forest units used for the compilation of the 1997-2002 Forest Management Plan were indicative of a move in forest management towards a more ecologically based delineation of forest units. Forest units were derived and the representative ecosites for the forest units were provided. In the 1997-2002 Forest Management Plan the former, singular, forest unit of spruce was separated into three classes of spruce. The rationale being that there were ecological differences and responses to treatment between the three classes of spruce. Three classes of spruce included SP1 which were upland spruce dominated sites with moderate to high productivity, SP2 which were fresh-wet sites of moderate productivity, and SP3 which were lowland sites of low productivity.

The forest units used for the compilation of the 2002-2007 Forest Management Plan, which were the basis for the 2007-2008 Contingency Plan, represent experience in the development of ecologically based forest units across northwestern Ontario and are similar

to the OMNR Regional Benchmark Forest Units (Standardized Forest Units). There are no differences between the 2002-2007 and 2007-2008 forest units, since the 2007-08 Contingency Plan's strategic direction was based on the 2002-2007 forest management plan.

Forest units used in the 2002-2007 forest management plan include the introduction of mixed forest units and a red and white pine forest unit. Mixed conifer 1 forest units are a grouping of those stands that are conifer dominated but not dominated by a singular conifer species and may also have a component of hardwood associated with them but no greater than 30%. The Mixed conifer 2 forest unit represents a forest condition where the stand is conifer dominated, but not to a singular species, and the hardwood component growing in association with the conifer is between 31% and 50%. The mixed hardwood forest captures those sites that are hardwood dominated not by a singular hardwood species. The red and white pine forest unit was developed to capture stands with a minor component of red pine or white pine and to track the development of future stands. While there are no red or white pine stands on the managed forest land base for the Caribou at present, the forest unit and associated silviculture ground rules allow for the potential to regenerate red or white pine on the licence.

Summary of Planned and Actual Harvest Volumes

The figures in Table 3 for the 1997-2002 term were compiled from approved annual reports for this reporting term. During the 1997-2002 term, 55% of the planned conifer and 35% of the planned hardwood volume was realized. Overall volume utilization was 53% of planned. The under-utilization of hardwood in the 1997-2002 term was a consequence of surplus hardwood available across northwestern Ontario and in closer proximity to wood utilizing facilitates. The lack of conifer utilization was identified as an issue in the Independent Forest Audit conducted for the 1999-2004 term.

The figures in Table 3 for the 2002-2007 term were also compiled from approved annual reports for this reporting term. During the 2002-2007 term, 63% of the planned conifer and 47% of the planned hardwood volume was realized. Overall volume utilization was increased to 61% of planned. A number of initiatives were implemented to move towards greater utilization of available volumes during the 2002-2007 term. These included the addition of a second harvest contractor conducting operations for Bowater Inc. utilizing both hardwood and conifer as well as the construction of a hardwood processing facility at the Hudson sawmill site. The increased usage of hardwood between terms can also be attributed to increased demand for hardwood across northwestern Ontario.

However, the recent economic downturn in the forest industry in the latter part of the 2002-2007 term, and more recently the entire global economic downturn, has not been conducive to increasing wood utilization on any forests in Ontario. This is evident in the 2007-2008 term with 46% of the planned conifer and 0.2% of the planned hardwood volume was realized. Overall volume utilization has decreased to 38% of planned. A lack of hardwood markets has contributed to the downturn in hardwood utilization.

Summary of Planned and Actual Harvest Depletion Area

Table 4 shows that in general, the trends in planned versus actual harvest depletion area are similar to the trends in planned versus actual harvest volumes. The forest units in the 1997-2002 term were very different than those in the 2002-2007 and 2007-2008 terms, therefore individual forest unit comparisons for the 1997-2002 term are not possible. For the 1997-2002 term the overall planned harvest area achievement (all forest units) was 56% of planned.

The following summarizes results from the 2002-2007 term on an individual forest unit basis for the more prominent planned and actual forest unit results.

- 53% of the jack pine forest unit planned for harvest was actually realized
- 60% of the spruce upland forest unit planned for harvest was actually realized
- 37% of the spruce lowland forest unit planned for harvest was actually realized
- 67% of the mixed conifer 1 forest unit planned for harvest was actually realized
- 56% overall harvest area achievement (all forest units combined) was realized

The following summarizes results from the 2007-2008 term on an individual forest unit basis for the more prominent planned and actual forest unit results.

- 29% of the jack pine forest unit planned for harvest was actually realized
- 58% of the spruce upland forest unit planned for harvest was actually realized
- 17% of the spruce lowland forest unit planned for harvest was actually realized
- 58% of the mixed conifer 1 forest unit planned for harvest was actually realized
- 43% overall harvest area achievement (all forest units combined) was realized

The economic downturn in the forest industry in the latter part of the 2002-2007 term, and the entire global economic downturn during 2008-2009, has not been conducive to utilizing planned harvest areas on the Caribou Forest as well as many other forest in northwestern Ontario.

Summary of Managed Productive Forest by Forest Unit

Table 5 for the 1997-2002 term was based on significantly different forest units than those used in the 2002-007 and 2007-2008 term. The 2002-2007 and 2007-08 term introduced the mixed conifer forest units (MC1 and MC2) and a mixed hardwood forest unit (MH1).

Note that the source data for Table 5 for the 2002-2007 and 2007-2008 terms (FMP-9) are both based on the exact same table (FMP-9), since the strategic direction for the 2007-08 Contingency Plan was based on the 2002-2007 FMP, therefore a Table 5 has been included for the 2008-2018 term. Also, note that the Table 5 data for all terms are based on three different FMPM table requirements which had slightly different formats. The introduction of a new base inventory between the 1997-2002 and the 2002-2007 also complicates analysis of

comparisons and trends between the three terms. None-the-less, some general forest unit trends can be identified while recognizing these inherent differences and these are discussed in the following.

Conifer Composition				
Forest Units	**1997-2002**	**2002-2007**	**2007-2008**	**2008-2018**
	Area (ha)	**Area (ha)**	**Area (ha)**	**Area (ha)**
BF1		50		687
OC1		813		2,366
Sp1, Sp2, Sp3	314,009			
Pj	120,954	44,499	52,277	50,803
SPU, SPL		238,141	368,248	268,766
PWR			43	43
MC1, MC2		96,083	52,941	113,480
Total Conifer	**434,963**	**379,586**	**473,509**	**436,145**
Conifer Proportion of Total	**90.7%**	**92.3%**	**97.8%**	**92.7%**
Hardwood Composition				
PO	37,000	9583	10,058	9,920
BW	7,437	417	426	278
MH1		21548		23,938
Total Hardwood	**44,437**	**31,548**	**10,484**	**34,136**
Hardwood Proportion of Total	**9.3 %**	**7.7%**	**2.2%**	**7.3%**
Total Conifer + Hardwood	**479,400**	**411,134**	**483,993**	**470,281**

In terms of conifer composition, the table above shows that the area of SPU and SPL forest units have increasing slightly (12%) between 2002 and 2008, although the Sp1, Sp2 and Sp3 was higher totaling 314,009 ha in 1997. The area of PJ1 forest unit has increased slightly between 2002 and 2008 (13%), although the Jack Pine forest unit in 1997 was higher at 120,954 ha. The overall conifer as a proportion of the total conifer and hardwood has increased over the periods from 90.7% in 1997-2002 to 97% 2007-2008. A slight decrease is noted between 2007-2008 and 2008-2018.

In terms of hardwood composition, the table shows that the area of Poplar forest unit has remained stable between 2002 and 2008. Similarly, the area of Birch forest unit has

remained stable between 2002 and 2008. In 1997 for both the Poplar and Birch forest units the inclusion of the Hardwood mixed forest units. The hardwood as a proportion of the total conifer and hardwood has ranged from an overall high of 9.3% in 1997-2002 to 2.2% in 2007-2008.

Again, it is important to note that the landbase area and the forest unit definitions changed significantly (especially the introduction of the mixed conifer forest units) between 1997 and 2002. However, it can be generally stated that the level of forest management activity has not resulted in major changes to forest unit representation on the Caribou Forest. The forest continues to be conifer dominated with spruce upland and lowland as the major species and tends to be in the mature to over-mature serial stages.

The implementation of the caribou mosaic for the management of caribou habitat, in combination with encouraging a conifer-dominated landscape for caribou habitat should result in this forest condition continuing through time. The maintenance of an older growth conifer dominated forest is consistent with the objectives associated with all three forest management plans, including the maintenance of long term caribou habitat and maintaining the managed Crown forest available for timber production.

Summary Report of Renewal, Tending and Protection Operations

Table 6 identifies the planned and actual renewal levels for the three terms. Planned renewal figures are forecasts of activity based on the level of actual and forecast depletion activity that occurred in the previous planning term and forecasts of depletion activity of the planning term under consideration. Deviations from forecast levels of depletion activity will directly result in deviations from actual renewal and tending levels. Therefore, a direct comparison of planned versus actual renewal operations within terms does not provide the best insight on how the forest is being managed.

A more meaningful trend analysis, from a forest sustainability perspective, is to examine the levels of renewal treatment by renewal class and assess whether or not the level of actual activity by renewal class is in proportion with plan. The following table outlines the level of renewal activity by activity class as a percentage of the planned figures.

Renewal Class	1997-2002 Plan	1997-2002 Actual	2002-2007 Plan	2002-2007 Actual	2007-2009 Plan	2007-2009 Actual
Natural Renewal (Extensive)	25.5	26.4	64.3	46.0	50.0	25.4
Artificial Renewal (Basic/Intensive)	74.5	73.6	35.6	53.3	49.1	74.6
Total Renewal Program	100.0	100.0	100.0	100.0	100.0	100.0

For the 1997-2002 term, the quantity of planned versus actual renewal by renewal class are, for all intents and purposes, in direct proportion to each other. Based on the reported figures, there was a 1% increase in natural renewal, plan versus actual, and a corresponding decrease in artificial renewal plan versus actual.

The 2002-2007 term plans indicates that the planned natural renewal planned was 64% and artificial renewal was at 35%. The actual natural renewal was lower than planned at 46% and actual artificial renewal was higher than planned at 53%. The increase in artificial renewal from the planned was likely due to a combination of factors including actual site types, anticipated amount of competing vegetation, and the objectives to encourage a more conifer-dominated landscape in order to provide long-term caribou habitat.

For the years 2007-2009 actual natural renewal was approximately one half of the planned, while artificial renewal was approximately 25% higher than the planned. Again, the increase in artificial renewal from the planned was likely due to a combination of factors such as actual site types, competing vegetation, and the objectives to promote a more conifer-dominated landscape.

Similar to planned renewal levels, the cleaning treatment levels are derived from forecasts of past and future regenerating areas that may require release from competing vegetation. Whether or not a regenerating area actually receives a cleaning treatment is dependent on the results of ground-based surveys. An on-the-ground assessment of whether or not competing vegetation threatens the regeneration forest ensures the prudent use of herbicide. Deviations in planned versus actual figures are a function of on-the-ground conditions where areas forecast to require cleaning did not actually require cleaning.

Spacing is conducted with the intention of increasing the individual tree size within a treatment area. Greater piece size offers two benefits to the forest industry – a greater quantity of sawlog size material and operational efficiencies associated with the handling of larger piece sizes. There may be additional benefits to the creation of caribou habitat. During the entire 1997-2002 term, 2000 hectares were proposed for spacing while 509 hectares were accomplished. During the 2002-2007 term actual spacing was approximately 60% of the planned. No spacing was planned or occurred in either the 2007-2008 or 2008-2009 terms.

Spacing treatment deviations from forecasts can be attributed to an increased awareness of where and when the greatest benefit from spacing can be derived. The awareness that the greatest benefit from spacing could be derived from spacing young jack pine with a natural or seeding origin came about during the 1997-2002 term. The difference between planned and actual treatments can be attributed to a lack of suitable sites upon which spacing would achieve the desired results. The level of achievement for spacing will not compromise the overall forest sustainability.

Harvest Area Successfully Regenerated – Summary of all Forest Units

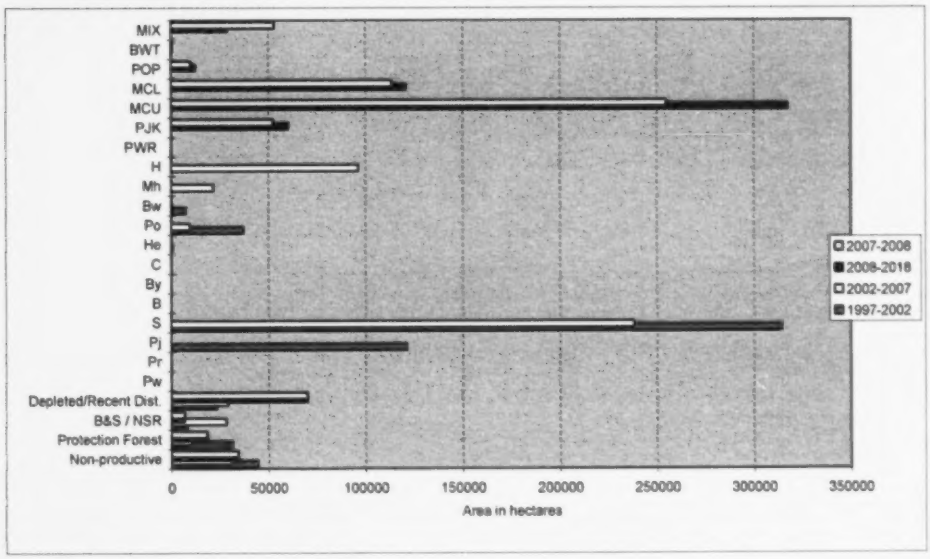
Table 7 summarizes the status of areas harvested between 1994 and 1999 and identifies progress towards the attainment of FTG status. The data for this table was compiled through the conduct of queries against records in our Geographical Information System. According to records of depletion and subsequent FTG surveys 85.4% of the area depleted by harvest between 1994 and 1999 has been declared successfully regenerated. Of the total area surveyed 14.6% of the area is not successfully regenerated. An additional 6.3% of the area is not successfully regenerating as the area is currently classed as roads and landings. A significant roads program occurred during this period including construction of the Normandy, Watin and Trist Roads.

The silviculture practices employed during the 1994-1999 period appear to have been successful at regenerating depleted areas. Therefore, objectives to ensure that harvested areas are successfully regenerated and free-growing in a timely manner are being met.

2009 Independent Forest Audit
Table 1 - Summary of Total Area Under Management

Past and Current Plans - Crown Managed
MU: Caribou Forest

Land Type		Plan Term	Area in hectares			
			Past Plans			
			1997-2002	2002-2007	2007-2008	2008-2018
Non-Forested						
Other Land			132,033	102,858	136,166	136,166
Forested						
Non-productive			44,462	30,891	34,325	34,325
Productive						
Protection			31,227	10,556	18,210	18,503
Production Forest						
	B&S / NSR / Below Regen Standard		8,233	28,052	6,794	6,780
	Depleted / Recent Disturbance		23,252	28,886	69,870	69,827
	Forest Stands by Working Group or Provincial Forest Type					
	Working Group:					
	Pw		-	-		
	Bf			50		
	Pr					-
	Pj		120,954	44,499		
	S		314,009	238,141		
	B					
	OC			813		-
	Po		37,000	9,583		
	Bw		7,437	417		
	Mh			21,548		
	MC			96,083		-
	Provincial Forest Type:*					
	PWR				43	43
	PJK				52,277	60,020
	MCU				254,870	317,329
	MCL				113,378	120,898
	POP				10,058	12,505
	BWT				426	449
	MIX				52,941	28,814
Total By Forest Unit Type			**479,400**	**411,134**	**483,993**	**540,058**
Total Production Forest			**510,885**	**468,072**	**560,657**	**616,665**
Total Forested Land			**586,574**	**509,519**	**613,192**	**669,493**



Source: FMP1 & FMP-2

Note: * Current Plan Term is from the 2007-2008 Contingency Plan, although the current FMP is the 2008-2018 FMP.

* Provincial Forest Types used for Current 2007 to 2008 FMP, therefore Forest Stands data is not directly comparable to previous two terms.

Table 2a - DESCRIPTION OF FOREST UNITS (FMP-8) 1997-2002

CARIBOU MANAGEMENT UNIT
PLAN TERM: APRIL 1, 1997 TO MARCH 31, 2002
FMP-8 DESCRIPTION OF FOREST UNIT

FU	Ecosite	Forest Type	Main WG	Silvicultural System	FRI Parameters & Definition	Additional Information
Sp1	ES20 ES26 ES14 (Sb wg only) ES16 (Po or Bw wg conversion to Sb) ES19 (Po or Bw wg conversion to Sb)	spruce and spruce dominated mixed woods	Sb	clearcut CLAAG strip cut	WG = Sb and site class = X, 1 And Ce + La + OC = 0 or WG = Sb and site class = 2 And Sb < 100% and Ce + La + OC = 0 or WG = Sw and site class = X,1,2,3	moderate to high productivity, upland sites
Sp2	ES22 ES31	black spruce	Sb	clearcut strip cut CLAAG	WG = Sb and site class = 2 and Sb = 100% or WG = Sb and site class X,1,2 and Ce + La + OC > 0	moderate productivity, fresh-wet sites
Sp3	ES34 ES35 ES36 ES37 ES12	lowland spruce and other conifer	Sb	clearcut strip cut CLAAG	WG = Sb and site class = 3 or WG = Ce and site class = X,1,2,3 or WG = La and site class = X,1,2,3 or WG = OC and site class = X,1,2,3	low productivity, lowland wet sites
Pj1	ES12 ES13 ES14 (Pj wg only) ES16 (Po or Bw wg conversion to Pj) ES19 (Po or Bw wg conversion to Pj) ES20 ES25	jackpine and jackpine dominated mixed woods	Pj	clearcut	WG = Pj and site class = X,1,2,3	all sites
Bf1	ES21 ES27 ES32	balsam and balsam dominated mixed woods	BF	clearcut	WG = Bf and site class = X,1,2,3	all sites
Po1	ES16 (Po only) ES19 (Po only) ES23 ES28 ES29 ES 33 (Po only)	poplar and poplar dominated mixed woods	Po	clearcut	WG = Po and site class = X,1,2,3	all sites
Bw1	ES16 (Bw only) ES19 (Bw only)	birch and birch dominated mixed woods	Bw	clearcut	WG = Bw and site class = X,1,2,3	all sites

Footnotes:

- For a further explanation of ecosites please refer to the Terrestrial and Wetland Ecosites of Northwestern Ontario, NWST Field Guide FG-02 May 1996, G.D. Racey et. al.
- No Red Pine or White Pine identified in inventory therefore ES11, ES15, ES18, ES24 not listed.
- No Black Ash working Group (other hardwoods) therefore ES30, ES38 not listed.
- For further explanation of Careful Logging Around Advanced Growth (CLAAG) refer to 'The Management of Black Spruce Advanced Growth in Northeastern Ontario', NEST Technical Report TR-008, July 1993, by D.J. Archibald and R.W. Arnup.
- For further explanation of Strip Clearcutting, refer to 'Strip Clearcutting in Black Spruce: A Guide for The Practicing Forester'; Forestry Canada, 1993 by J.K. Jeglum and D.J. Kennington.

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MU: Caribou Forest

Table 2b - DESCRIPTION OF FOREST UNITS (FMP-8) 2002-2007 and 2007-08

Forest Unit		Forest Type	Main Working Group	Site Type(s)	Silvicultrual System	FRI Parameters	Additional Information
Code	Name						
SPL	Spruce Lowland	Conifer	Spruce	ES35 Poor Swamp: Black Spruce ES36 Intermediate Swamp: Black Spruce	Clearcut	Ecosite in (34,35,36) or Ecosite = 37 and Sb >= 7	Black Spruce dominated lowland
SPU	Spruce Upland	Conifer	Spruce	ES12 Black Spruce-Jackpine (Sp only) ES20 Spruce-Pine / Feathermoss (Sp only) ES21 Fir-Spruce Mixedwood (Sp only) ES22 Spruce-Pine/Ledum/Feathermoss (Sp only)	Clearcut	Wg = Sb or Sw and Sb + Sw >= 70% and Po + Bw <= 20%	Black spruce dominated upland
PJ1	Jackpine	Conifer	Jackpine	ES12 Black Spruce – Jackpine (Sp only) ES13 Jackpine / Feathermoss (Sp only) ES20 Spruce-Pine / Feathermoss (Pj only) ES21 Fir-Spruce Mixedwood (Pj only)	Clearcut	Pj >= 60% and Po <=20%	Jackpine dominated
PO1	Poplar	Intolerant Hardwood	Poplar	ES19 Hardwood-Fir-Spruce Mixedwood (Po only)	Clearcut	Po >= 70%	Poplar dominated
BW1	White Birch	Intolerant Hardwood	White Birch	ES19 Hardwood-Fir-Spruce Mixedwood (Bw only)	Clearcut	Bw >= 70%	White birch dominated
BF1	Balsam Fir	Conifer	Balsam Fir	ES21 Fir-Spruce Mixedwood (Bf only)	Clearcut	Bf >= 60%	Balsam fir dominated
OC1	Other Conifer	Conifer	Cedar/Larch	ES37 Rich Swamp: Cedar (Other Conifer)	Clearcut	Ce + La >= 60%	Cedar / Birch dominted
MC1	Mixed Conifer 1	Mixed	Mixed	ES20 Spruce-Pine/Feathermoss	Clearcut	Sb+Sw+Bf+Pj+Pr+Pw+Ce +La 50%>=, and Po <+ 20% and Po+Bw <30%	
MC2	Mixed Conifer 2	Mixed	Mixed	ES21 Fir-Spruce Mixedwood	Clearcut	Sb+Sw+Bf+Pj+Pr+Pw+Ce +La >=60% Or Sb+Sw+Bf+Pj+Pr+Pw+Ce +La >=50% and working group in (Sb,Sw,Pj,Bf,Ce,La,Pr,Pw, Oc)	
MH1	Mixed Hardwood	Mixed	Mixed	ES19 Hardwood-Fir-Spruce Mixedwood	Clearcut	Po + Bw + OH >= 50%	
PRW	Red/White Pine	Conifer	Red/White Pine	ES11 Red Pine – White Pine ES15 Red Pine – White Pine ES18 Red Pine – White Pine ES24 Red Pine – White Pine	Clearcut	Pr + Pw >= 30%	

-when forest units are assigned to stands, purer forest units are sorted before mixed forest units (MC1, MC2, MH1)

Table 2c - DESCRIPTION OF FOREST UNITS (FMP-3) 2008-2018

Forest Unit		Ecosite(s)	Provincial Forest Type	Silvicultural System	FRI Parameters & Criteria	Additional Information
Code	Name					
SPL 119,000 ha	Spruce Lowland	ES35 Poor Swamp: Black Spruce ES36 Intermediate Swamp: Black Spruce	MCL	Clearcut	Ecosite in (34,35,36) or Ecosite = 37 and Sb >= 7	Black spruce dominated lowland
SPU 190,000 ha	Spruce Upland	ES20 Spruce-Pine / Feathermoss (Sp only) ES21 Fir-Spruce Mixedwood (Sp only) ES22 Spruce-Pine/Ledum/Feathermoss (Sp only) ES31 Spruce-Pine / Feathermoss (Sp only)	MCU	Clearcut	Wg = Sb or Sw, and Sb + Sw >= 70% and Po+Bw <=20%	Black spruce dominated upland
PJ1 61,000 ha	Jack Pine	ES20 Spruce-Pine / Feathermoss (Pj only) ES21 Fir-Spruce Mixedwood (Pj only) ES12 Black Spruce-Jack Pine (Pj only) ES13 Jack Pine-Conifer (Pj only)	PJK	Clearcut	Pj >= 60% and Po <=20%	Jack pine dominated
PO1 13,000 ha	Poplar	ES16 Hardwood-Fir-Spruce Mixedwood (Po only) ES19 Hardwood-Fir-Spruce Mixedwood (Po only) ES28 Hardwood-Fir-Spruce Mixedwood (Po only)	POP	Clearcut	Po >= 70%	Poplar dominated
BW1 500 ha	White Birch	ES12 Black Spruce-Jack Pine (Bw only) ES16 Hardwood-Fir-Spruce Mixedwood (Bw only) ES19 Hardwood-Fir-Spruce Mixedwood (Bw only)	BWT	Clearcut	Bw >= 70%,	White birch domintated
BF1 1,000 ha	Balsam Fir	ES21 Fir-Spruce Mixedwood (Bf only) ES22 Spruce-Pine/Ledum/Feathermoss (Bf only) ES31 Spruce-Pine / Feathermoss (Bf only)	MIX	Clearcut	Bf >= 60% or if Bf >= 40% and conifers = 50%	Balsam fir dominated
OC1 3,000 ha	Other Conifer	ES17 White Cedar (Ocr only) ES36 Intermediate Swamp (Oc only) ES37 Rich Swamp: Cedar (Other Conifer) WG=CE or Ce>=4) and ES=17 WG=CE or Ce>=4) and ES=37	MCL	Clearcut	Oc + Ce + La >= 60%	Cedar/Larch dominated
PWR	Red/White Pine	ES15, 18, 20 Red Pine - White Pine ES18 Red Pine - White Pine	PWR	Clearcut	Pw and or PR >= 20%	Red &/or White pine dominated
MC1 100,000 ha	Mixed Conifer 1	ES20 Spruce-Pine / Feathermoss ES21 Fir-Spruce Mixedwood ES22 Spruce-Pine/Ledum/Feathermoss	MCU	Clearcut	Sb+Sw+Bf+Pj+Pr+Pw+Ce+La >=50%, and Po <= 20% and Po+Bw <= 30%	Mixed Conifer/Low Level Hardwood
MC2 30,000 ha	Mixed Conifer 2	ES14 Pine-Spruce Mixedwood ES21 Fir-Spruce Mixedwood	MIX	Clearcut	Sb+Sw+Bf+Pj+Pr+Pw+Ce+La >= 60% Or Sb+Sw+Bf+Pj+Pr+Pw+Ce+La >= 50%, and working group in (Sb,Sw,Pj,Bf,Ce,La,Pr,Pw,Oc)	Mixed Conifer/Higher Level Hardwood
MH1 30,000 ha	Mixed Hardwood	ES16 Hardwood-Fir-Spruce Mixedwood ES19 Hardwood-Fir-Spruce Mixedwood ES21 Fir-Spruce Mixedwood	MIX	Clearcut	Po + Bw + OH >= 50%	Mixed Hardwood
OH1	Other Hardwood	ES19 Hardwood-Fir-Spruce Mixedwood ES36 Intermediate Swamp ES38 Rich Swamp	TOL	Clearcut	Po + Bw + OH >= 30%	Other Hardwood

-when forest units are assigned to stands, purer forest units are sorted before mixed forest units (MC1, MC2, MH1)

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Table 3 - Summary of Planned & Actual Harvest Volumes

MU: Caribou Forest

Average Planned Annual Harvest Volumes

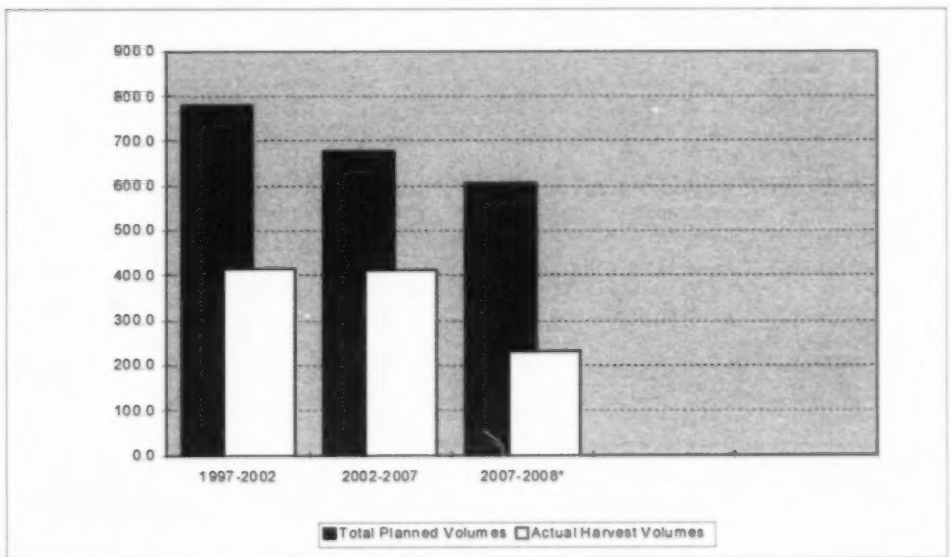
Volumes are Annualized for the indicated 5 year period

	Volume in '000's cubic metres		
	Past Plans		Current
Species	1997-2002	2002-2007	2007-2008
Spruce	507,185	413,442	359,149.0
Balsam Fir	6,405	19,599	17,808.0
Jack Pine	194,305	117,381	112,196.0
Cedar	2,000	935	1,051.0
Larch	1,224	13,912	9,667.0
Poplar	59,202	82,507	77,683.0
Birch	10,140	29,796	28,127.0
Total Planned Volumes	780,460.6	677,571.9	605,681.0

Actual Harvest Volumes

Volumes are Annualized for the indicated 5 year period

	Volume in '000's cubic metres		
	Past Plans		Current *
Species	1997-2002	2002-2007	2007-2008
Spruce	254,721.6	222,980.6	155,544.0
Balsam Fir	2,823.8	3,961.4	7,609.0
Jack Pine	133,034.4	129,541.0	65,917.0
Cedar	25.4	4.0	-
Larch	1,062.0	1,114.2	752.0
Poplar	21,391.6	42,647.4	196.0
Birch	2,698.6	10,367.6	104.0
Total Actual Volumes	415,757.4	410,616.2	230,122.0



Source:

Planned: FMPM FMP-21 and FMP-17

Actual 1997-2002: Annual Reports (AR-3, AR-5 - 1996 FMPM)

Actual 2002-2007: Annual Reports (AR-3, AR-5 - 1996 FMPM), (AR-4 - 2004 FMPM)

Planned 2007-2008: Based on FMP-17 from 2007-08 Contingency Plan.

* Actual 2007-2008: Draft Annual Reports (AR-3, AR-5 - 1996 FMPM), (AR-4 - 2004 FMPM) for 2007-2008 Contingency Plan

Note: Actual volumes do not include salvage

2009 Independent Forest Audit

Table 4 - Summary of Planned & Actual Depletion Area

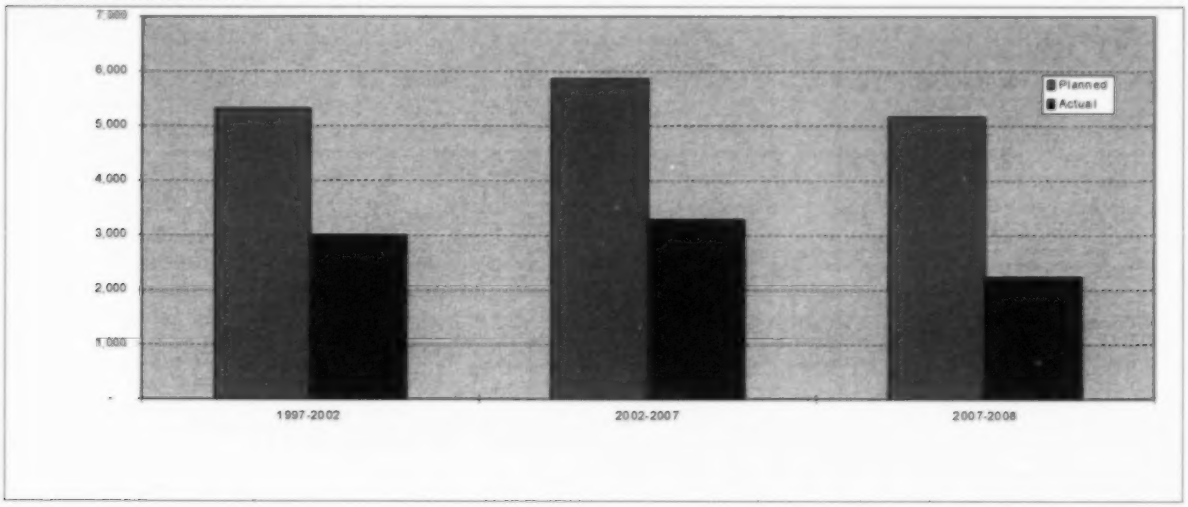
Past and Current Plans

MU: Caribou Forest

Area is Annualized for the indicated 5 year period

	Planned Annual Harvest Area			Actual Depletion Area					
	Area in hectares			*Area in hectares*					
	Past Plans		Current *	Past Plans				Current *	
Plan Term	1997-2002	2002-2007	2007-2008	1997-2002		2002-2007		2007-2008	
Forest Unit				Harvest	Natural	Harvest	Natural	Harvest	Natural
Balsam Fir	9		-	-	-	-			
Jack Pine	1,305	224	208	932	-	119	0	62	176
Spruce 1	2,351			1,335	1				
Spruce 2	1,130			511					
Spruce 3	169			55					
Birch	44	0	-	24	-	-		-	
Poplar	319	31	19	138		21		2	
Mixed Conifer 1		1,828	1,607			1,232	15	943	648
Mixed Conifer 2		588	569			351	0	241	101
Mixed Hardwood 1		305	256			208	7	85	3
Other Conifer		24	24			3		-	32
Spruce Lowland		1,636	1,283			601	2	218	610
Spruce Upland		1,213	1,188			730	5	689	951
Total Area:	5,328	5,848	5,155	2,993	1	3,264	30	2,239	2,520

Planned vs. Actual Harvest Area



Source:
Planned: FMPM FMP-18 and FMP-15
Actual 1997-2002: Annual Reports (AR-1)
Actual 2002-2007: Annual Reports (AR-1 - 1996 FMPM) (AR-1, AR-6 - 2004 FMPM)
Actual 2007-2008: Draft Annual Reports (AR-1, AR-6 - 2004 FMPM)
Note: * Current Plan Term is from the 2007-2008 Contingency Plan, although the current FMP is the 2008-2018 FMP. Actual data based on Draft 2007-08 Annual Report. Actual data not yet available for 2008-09.

Table 5a - SUMMARY OF MANAGED PRODUCTIVE FOREST BY FOREST UNIT (FMP-9) 1997-2002

Summary of Managed Productive Forest by Forest Unit

Caribou Forest
Plan Term: April 1, 1997 to March 21, 2017
FMP-9 Summary of Managed Crown Productive Forest By Forest Unit

Forest Unit	Age Class	Initial	Cutover Estimate	Total
Balsam	10	16	0	16
	30	0	0	0
	50	384	0	384
	70	992	0	992
	90	1,521	0	1,521
	110	465	0	465
	130	31	0	31
	150	0	0	0
	170	0	0	0
	181+	0	0	0
	Bf subtotal			3,410
Birch	10	13	0	13
	30	0	0	0
	50	482	0	482
	70	3,206	0	3,206
	90	2,142	0	2,142
	110	865	0	865
	130	641	0	641
	150	41	0	41
	170	47	0	47
	181+	0	0	0
	Bw subtotal			7,437
Jack Pine	10	681	14,103	14,785
	30	112	0	112
	50	4,615	0	4,615
	70	71,283	0	71,283
	90	18,397	0	18,397
	110	4,237	0	4,237
	130	4,158	0	4,158
	150	3,355	0	3,355
	170	13	0	13
	181+0	0	0	0
	Pj subtotal			120,954
Poplar	10	25	741	766
	30	8	0	8
	50	1,384	0	1,384
	70	20,660	0	20,660
	90	9,403	0	9,403
	110	2,199	0	2,199
	130	2,059	0	2,059
	150	523	0	523
	170	0	0	0
	181+	0	0	0
	Po subtotal			37,000
Spl	10	2,069	6,168	8,237
	30	440	0	440
	50	5,861	0	5,861
	70	73,878	0	73,878
	90	32,581	0	32,581
	110	16,376	0	16,376
	130	26,892	0	26,892
	150	27,471	0	27,471

Forest Unit	Age Class	Protection Forest		Production Forest				
				Unavailable		Stage of Managemen	Available	
		ha	m3	ha	m3		ha	m3

	170	4,295	0	4,295
	181+	27	0	27
	Sp1 subtotal			196,058
Sp2	10	4,452	1,762	6,214
	30	61	0	61
	50	1,289	0	1,289
	70	11,620	0	11,620
	90	5,423	0	5,423
	110	8,972	0	8,972
	130	17,072	0	17,072
	150	27,916	0	27,916
	170	4,367	0	4,367
	181+	70	0	70
	Sp2 subtotal			83,005
Sp3	10	994	881	1,875
	30	73	0	73
	50	1,168	0	1,168
	70	6,514	0	6,514
	90	2,481	0	2,481
	110	4,146	0	4,146
	130	7,311	0	7,311
	150	10,105	0	10,105
	170	1,152	0	1,152
	181+	120	0	120
	Sp3 subtotal			34,946
	Total	459,154	23,655	482,809

	181-200	0.0		0.0	0.0		0.0	0.0
	Forest Unit Subtotal	0.0	0.0	12.6	0.0		50.4	0.0
MC1	1-20	0.0		209.5	0.0		4982.6	0.0
	21-40	376.7	9040.8	161.4	3873.6		2661.8	63883.2
	41-60	36.4	2948.4	218.9	17730.9		1796.7	145532.7
	61-80	275.2	37702.4	4017.7	550424.9		25129.5	3442741.5
	81-100	318.3	45198.6	3872.0	549824.0		25008.9	3551263.8
	101-120	235.5	24727.5	1511.4	158697.0		9761.4	1024947.0
	121-140	48.0	3936.0	867.8	71159.6		4976.4	408064.8
	141-160	53.0	3498.0	133.0	8778.0		476.8	31468.8
	161-180	0.0		13.1	0.0		18.1	0.0
	181-200	37.2	3571.2	2.0	192.0		34.4	3302.4
	Forest Unit Subtotal	1380.3	130622.9	11006.8	1360680.0		74846.6	8671204.2
MC2	1-20	0.0		86.7	0.0		1854.0	0.0
	21-40	149.8	3894.8	77.1	2004.6		1395.7	36288.2
	41-60	42.9	3732.3	52.6	4576.2		435.0	37845.0
	61-80	74.8	10546.8	1051.6	148275.6		6006.2	846874.2
	81-100	201.4	32626.8	1182.1	191500.2		7222.8	1170093.6
	101-120	21.4	2482.4	524.5	60842.0		3258.1	377939.6
	121-140	0.0		137.8	0.0		948.1	0.0
	141-160	0.0		15.2	0.0		117.1	0.0
	161-180	0.0		0.0	0.0		0.0	0.0
	181-200	0.0		0.0	0.0		0.0	0.0
	Forest Unit Subtotal	490.3	53283.1	3127.6	407198.6		21237.0	2469040.6

OC	1-20	11.0		40.1	0.0		57.8	0.0
	21-40	5.9	123.9	0.0	0.0		0.0	0.0
	41-60	27.3	1419.6	9.9	514.8		10.5	546.0
	61-80	49.0	3822.0	46.8	3650.4		123.1	9601.8
	81-100	6.1	542.9	48.8	4343.2		182.2	16215.8
	101-120	71.8	6031.2	90.1	7568.4		127.5	10710.0
	121-140	24.9	1792.8	157.4	11332.8		237.4	17092.8
	141-160	0.0		31.4	0.0		55.5	0.0
	161-180	0.0		0.0	0.0		0.0	0.0
	181-200	23.2	1461.6	17.6	1108.8		18.6	1171.8
	Forest Unit Subtotal	219.2	15194.0	442.1	28518.4		812.6	55338.2
PO	1-20	19.0		231.9	0.0		2924.5	0.0
	21-40	0.0		3.7	0.0		27.2	0.0
	41-60	0.0		12.4	0.0		141.6	0.0
	61-80	1.8	387.0	468.4	100706.0		3371.5	724872.5
	81-100	20.4	4161.6	228.9	46695.6		2829.7	577258.8
	101-120	0.0		2.9	0.0		282.5	0.0
	121-140	0.0		1.5	0.0		6.0	0.0
	141-160	0.0		0.0	0.0		0.0	0.0
	161-180	0.0		0.0	0.0		0.0	0.0
	181-200	0.0		0.0	0.0		0.0	0.0
	Forest Unit Subtotal	41.2	4548.6	949.7	147401.6		9583.0	1302131.3
BW	1-20	4.4		16.2	0.0		213.7	0.0
	21-40	0.0		12.0	0.0		53.3	0.0
	41-60	12.8	704.0	25.2	1386.0		38.6	2123.0
	61-80	52.0	5148.0	15.7	1554.3		111.8	11068.2
	81-100	0.0		0.0	0.0		0.0	0.0
	101-120	0.0		0.0	0.0		0.0	0.0
	121-140	0.0		0.0	0.0		0.0	0.0
	141-160	0.0		0.0	0.0		0.0	0.0
	161-180	0.0		0.0	0.0		0.0	0.0
	181-200	0.0		0.0	0.0		0.0	0.0
	Forest Unit Subtotal	69.2	5852.0	69.1	2940.3		417.4	13191.2
MH	1-20	7.5		54.4	0.0		1145.6	0.0
	21-40	140.0	3640.0	124.5	3237.0		1845.7	47988.2
	41-60	41.5	3361.5	287.7	23303.7		1171.6	94899.6
	61-80	119.5	16252.0	1556.9	211738.4		9228.6	1255089.6
	81-100	160.9	23652.3	1179.5	173386.5		7451.3	1095341.1
	101-120	13.6	1441.6	54.8	5808.8		692.5	73405.0
	121-140	3.7	214.6	0.0	0.0		12.2	707.6
	141-160	0.0		0.0	0.0		0.0	0.0
	161-180	0.0		0.0	0.0		0.0	0.0
	181-200	0.0		0.0	0.0		0.0	0.0
	Forest Unit Subtotal	486.7	48562.0	3257.8	417474.4		21547.5	2567431.1
PR	1-20	0.0		0.0	0.0		0.0	0.0
	21-40	0.0		0.0	0.0		0.0	0.0
	41-60	0.0		0.0	0.0		0.0	0.0
	61-80	0.0		0.0	0.0		0.0	0.0
	81-100	0.0		0.0	0.0		0.0	0.0
	101-120	0.0		0.0	0.0		0.0	0.0
	121-140	0.0		0.0	0.0		0.0	0.0
	141-160	0.0		0.0	0.0		0.0	0.0
	161-180	0.0		0.0	0.0		0.0	0.0
	181-200	0.0		0.0	0.0		0.0	0.0
	Forest Unit Subtotal	0.0	0.0	0.0	0.0		0.0	0.0
NFG	1-20	0.0		0.0	0.0		264.7	0.0
	21-40	0.0		0.0	0.0		0.0	0.0
	41-60	0.0		0.0	0.0		0.0	0.0
	61-80	0.0		0.0	0.0		0.0	0.0
	81-100	0.0		0.0	0.0		0.0	0.0
	101-120	0.0		0.0	0.0		PR	0.0
	121-140	0.0		0.0	0.0		0.0	0.0
	141-160	0.0		0.0	0.0		0.0	0.0
	161-180	0.0		0.0	0.0		0.0	0.0
	181-200	0.0		0.0	0.0		0.0	0.0
	Forest Unit Subtotal	0.0	0.0	0.0	0.0		0.0	0.0
	TOTAL	10556.4	747883.7	54955.0	5629208.1	0.0	411399.0	38459858.2

MANAGEMENT UNIT NAME: Caribou Forest
PLAN PERIOD: April 1, 2008 TO March 31, 2018

FMP-4 SUMMARY OF MANAGED CROWN PRODUCTIVE FOREST BY FOREST UNIT

Forest Unit	Age Class	Protection Forest (ha)	Production Forest		
			Unavailable (ha)	Stage of Management	Available (ha)
BF1	001-020	6	0	CLEARCUT	65
	021-040	0	0	CLEARCUT	6
	041-060	0	0	CLEARCUT	42
	061-080	0	0	CLEARCUT	230
	081-100	29	0	CLEARCUT	204
	101-120	0	0	CLEARCUT	129
	141-160	0	0	CLEARCUT	11
	Subtotal	29	0	0	687
BW1	001-020	4	0	CLEARCUT	70
	021-040	0	0	CLEARCUT	4
	041-060	52	0	CLEARCUT	67
	061-080	42	0	CLEARCUT	80
	081-100	51	0	CLEARCUT	57
	Subtotal	148	0	0	278
MC1	001-020	12	0	CLEARCUT	12,159
	021-040	376	0	CLEARCUT	5,415
	041-060	94	0	CLEARCUT	984
	061-080	296	0	CLEARCUT	16,776
	081-100	747	0	CLEARCUT	33,363
	101-120	426	0	CLEARCUT	13,055
	121-140	219	0	CLEARCUT	4,746
	141-160	16	0	CLEARCUT	516
	161-180	0	0	CLEARCUT	41
	181-200	0	0	CLEARCUT	8
	Subtotal	2,186	0	0	87,063
MC2	001-020	0	0	CLEARCUT	5,578
	021-040	134	0	CLEARCUT	2,338
	041-060	59	0	CLEARCUT	197
	061-080	159	0	CLEARCUT	3,506
	081-100	421	0	CLEARCUT	9,101
	101-120	139	0	CLEARCUT	4,525
	121-140	0	0	CLEARCUT	1,030
	141-160	0	0	CLEARCUT	143
	Subtotal	912	0	0	26,417
MH1	001-020	0	0	CLEARCUT	2,477
	021-040	92	0	CLEARCUT	870
	041-060	171	0	CLEARCUT	1,505
	061-080	349	0	CLEARCUT	7,629
	081-100	330	0	CLEARCUT	10,914
	101-120	48	0	CLEARCUT	543
	121-140	4	0	CLEARCUT	0
	Subtotal	993	0	0	23,938
OC1	001-020	30	0	CLEARCUT	266
	041-060	6	0	CLEARCUT	20
	061-080	24	0	CLEARCUT	203
	081-100	100	0	CLEARCUT	437
	101-120	10	0	CLEARCUT	453
	121-140	69	0	CLEARCUT	846

Forest Unit	Age Class	Protection Forest (ha)	Production Forest		
			Unavailable (ha)	Stage of Management	Available (ha)
	141-160	62	0	CLEARCUT	93
	161-180	0	0	CLEARCUT	14
	181-200	0	0	CLEARCUT	36
	201-220	61	0	CLEARCUT	0
	Subtotal	362	0	0	2,366
PJI	001-020	5	0	CLEARCUT	11,859
	021-040	1,036	0	CLEARCUT	4,821
	041-060	96	0	CLEARCUT	730
	061-080	114	0	CLEARCUT	11,079
	081-100	121	0	CLEARCUT	21,336
	101-120	0	0	CLEARCUT	905
	121-140	0	0	CLEARCUT	46
	181-200	0	0	CLEARCUT	27
	Subtotal	1,392	0	0	50,803
PO1	001-020	47	0	CLEARCUT	3,102
	021-040	0	0	CLEARCUT	19
	041-060	0	0	CLEARCUT	72
	061-080	0	0	CLEARCUT	2,631
	081-100	91	0	CLEARCUT	3,877
	101-120	0	0	CLEARCUT	192
	121-140	0	0	CLEARCUT	7
	Subtotal	138	0	0	9,920
PWR	001-020	0	0	CLEARCUT	6
	021-040	0	0	CLEARCUT	29
	061-080	0	0	CLEARCUT	8
	Subtotal	0	0	0	43
SPL	001-020	72	0	CLEARCUT	17,344
	021-040	299	0	CLEARCUT	1,197
	041-060	105	0	CLEARCUT	1,335
	061-080	953	0	CLEARCUT	17,298
	081-100	1,380	0	CLEARCUT	22,297
	101-120	1,555	0	CLEARCUT	23,054
	121-140	1,078	0	CLEARCUT	15,898
	141-160	651	0	CLEARCUT	4,959
	161-180	4	0	CLEARCUT	601
	181-200	86	0	CLEARCUT	466
	201-220	0	0	CLEARCUT	6
	Subtotal	6,185	0	0	104,456
SPU	001-020	64	0	CLEARCUT	27,116
	021-040	40	0	CLEARCUT	1,548
	041-060	77	0	CLEARCUT	2,737
	061-080	273	0	CLEARCUT	24,417
	081-100	512	0	CLEARCUT	54,392
	101-120	331	0	CLEARCUT	33,427
	121-140	69	0	CLEARCUT	17,221
	141-160	0	0	CLEARCUT	3,100
	161-180	0	0	CLEARCUT	216
	181-200	0	0	CLEARCUT	113
	201-220	0	0	CLEARCUT	21
	Subtotal	1,366	0	0	164,310
Total		13,712	0		470,280

Source: January 2007 Landbase

2009 Independent Forest Audit

MU: Caribou Forest

Table 6 - SUMMARY REPORT OF RENEWAL, TENDING AND PROTECTION OPERATIONS (RPFO-7 and/or AR-7)

	Area Summary of all Forest Units (ha)							
	Past Plan Term		Past Plan Term		Current Plan Term *			
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
Renewal	1997-2002	1997-2002	2002-2007	2002-2007	2007-2008	2007-2008	2008-2018	2008-2009
Regeneration								
Uneven-Aged Management								
Selection Cut - Harvest								
Total Uneven-Aged Management								
Even-Aged Management								
Natural Regeneration								
Clearcut	697.2	154.8	1,323.0	1,546.0	3,252.0	588.0	965.4	1,039.2
Strip Cut	397.2			0.0				
CLAAG (natural seeding)	44.2	256.4	2,457.8	408.0		102.4	1,137.5	92.1
Group Seed Tree Cut				36.0				
Clearcut Natural Seeding		77.6						
Subtotal Natural	1,138.6	488.8	3,780.8	1,990.0	3,252.0	690.4	2,102.9	1,131.3
Artificial Regeneration								
Planting	2,541.4	1,216.4	1,357.6	1,942.0	1,115.0	1,736.0	2,152.1	1,988.6
Seeding direct	352.0	145.6	600.0	338.0	678.0	1,063.0	1,067.8	546.0
with site preparation								
Scarification	426.4		140.0					
Subtotal Artificial	3,319.8	1,362.0	2,097.6	2,280.0	1,793.0	2,799.0	3,220.5	2,534.6
Total Even-Aged Management	4,458.4	1,850.8	5,878.4	4,270.0	5,045.0	3,489.4	5,323.4	3,665.9
Total Regeneration								
Site Preparation								
Mechanical	4,037.6	1,438.8	2,097.6	1,328.0	2,018.0	1,733.0	2,792.1	1,693.0
Chemical				50.0			0.2	
Prescribed Burn						97.0		
Total Site Preparation	4,037.6	1,438.8	2,097.6	1,378.0	2,018.0	1,830.0	2,792.3	1,693.0
Tending								
Cleaning								
manual								
chemical - ground			100.0					
- aerial	600.0	138.2	600.0	425.0	1,348.0	1,008.0	907.4	694.5
mechanical								
prescribed burn								
Spacing, pre-commercial thinning, improvement cutting								
even-aged	400.0	101.1	500.0	296.0			234.6	0.0
uneven-aged								
Cultivation								
Total Tending	1,000.0	239.3	1,200.0	721.0	1,348.0	1,008.0	1,142.0	694.5
Protection (Insect Pest Control)								
accelerated harvest								
salvage								
manual protection								
ground insecticide								
aerial insecticide								
Total Protection								

Source:

Planned: 1996 FMPM Table FMP-25, 2004 FMPM Table FMP-21

Actual: 1997-2002 based on RPFO-7; 2002-2007 based on Annual Reports (AR-7)

Actual: 2007-2008 and 2008-2009 have not been reviewed and approved by the Ministry of Natural Resources.

Note: * Current Plan Term includes the 2007-2008 Contingency Plan, although the current FMP is the 2008-2018 FMP. 2008-2018 Current Plan term also included.

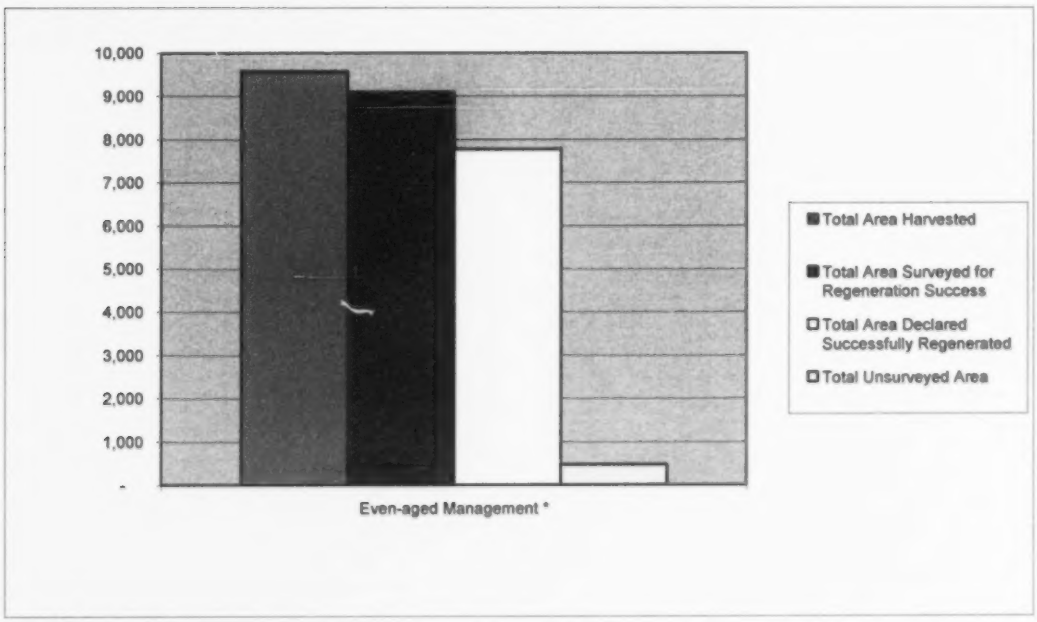
Planting: includes supplemental planting

2009 Independent Forest Audit

Table 7 - Harvested Area Successfully Regenerated - Summary of All Forest Units

MU: Caribou Forest

	AREA IN HECTARES (All Forest Units Combined)
	Even-aged Management *
Total Area Harvested	9,577
Total Area Surveyed for Regeneration	9,104
Total Unsurveyed Area	473
Total Area Declared Successfully Regenerated	7,774
Total Area Surveyed Not Successfully Regenerated	-
NSR	844
B&S	-
Not Available for Regen. (eg. Roads & landings)	486
Other	-
Percent of Area Surveyed Declared Successfully Regenerated	85.4%



Source:
of depletions from 1994-1999 and the

Appendix B

Audit Team Members and Qualifications

Name	*Role*	*Responsibilities*	*Credentials*
Mr. Bruce Byford R.P.F. Arbex Forest Resource Consultants Ltd.	Lead Auditor Forest Management & Silviculture Auditor	Audit Management & coordination Liaison with OMNR & Auditee Review documentation related to forest management planning and review and inspect silviculture practices Determination of the sustainability component.	B.Sc.F. ISO 14001 Lead Auditor Training. FSC assessor training. 30 years of consulting experience in Ontario in forest management planning and resource inventory. Previous lead auditor work experience on 10 IFA audits and 16 FSC certification assessments.
Mr. Al Stewart Arbex Senior Associate	Wildlife/First Nations Auditor	Review & inspect AOC documentation & practices First Nations consultation Determination of the sustainability component.	B.Sc. (Agriculture) ISO 14001 Lead Auditor Training. FSC assessor training. 41 years experience in natural resource management planning, field operations, policy development, auditing and working with First Nation communities. Previous work experience on 12 IFA audits.
Mr. David Watton Arbex Senior Associate	Forest Management Planning & Public Participation Auditor	Review documentation and practices related to forest management planning & public participation Determination of the sustainability component.	B.Sc., M.Sc. ISO 14001 Lead Auditor Training. 41 years experience in natural resource management planning, land use planning, field operations, and policy development. Previous work experience on 11 IFA audits.

Mr. Trevor Isherwood R.P.F. Tri-lac Forestry Services Arbex Associate	Silvicultural, Forest Management and Contractual Compliance Auditor	Review and inspect silvicultural practices and related documentation Review and inspect documents related to contractual compliance and socio-economics Determination of the sustainability component.	B.Sc.F. Former General Manager of SFL 41 years experience in forest management and operations. Previous work experience on 8 IFA audits.
Mr. Mark Fleming R.P.F.	Technical Advisor - SFMM	Analysis of SFMM model outputs and decision criteria and the determination of the sustainability component.	B.Sc.F. R.P.F. Previous work experience on IFA audits and FSC certification assessments. Experience as OMNR Planning Forester & Unit Forest.
Dorothy Dobrik GIS Specialist Arbex Forest Resource Consultants Ltd.	Administrative Assistant	Administrative Support to the audit including GIS support for the selection of sample sites.	B.A. Geography, Diploma Forestry Tech Diploma GIS Specialist Previous administrative support in IFA and FSC audits.

Appendix C

Independent Forest Audit Guiding Principles

There are eight guiding principles in the 2009 Independent Forest Audit Process and Protocol, which guide the audit.

Commitment Commitment is reflected in vision, mission, and policy statements of the Company. Vision and mission statements are intended to provide long-term guidance for the organization. Policy statements reflect how the organization's vision and mission will be achieved. These statements must be reflected in the day-to-day operations of the organization.
Public Consultation and Aboriginal Involvement The process of sustainable forest planning, implementation, and monitoring is conducted in an open consultative fashion, with input from all members of the planning team, Local Citizen's Committee, native groups and other parties with an interest in the operations of the forest unit.
Forest Management Planning The forest management planning process involves the input of a number of individuals and groups to describe the current condition of the forest, the values and benefits to be obtained from the forest, the desired condition of the forest in the future, and the best methods to achieve the goal. Certain minimum standards and procedures have been established upon which all management units are evaluated.
Plan Assessment and Implementation Verification of the actual results of operations in the field compared to the planned operations is required to be able to assess achievements of the plan objectives and compliance with laws and regulations. In conjunction with the review of operations, the reporting tables are tested to ensure accurate results are reported.
System Support System support concerns resources and activities needed to support plan implementation so as to achieve the desired objectives. Appropriate control, documentation and reporting procedures must be in place and operational. Planned action should occur at planned times, in planned places and to the planned degree.

Monitoring The activities and the effects of these activities in achieving management objectives must be regularly measured and assessed. In particular, the indicators of achievement must be assessed and their effectiveness reviewed.
Achievement of Management Objectives & Forest Sustainability Periodic assessments of the management of the forest Unit operations and the forest Unit must be made in order to determine whether forest sustainability and other management objectives are being achieved. This includes comparing the actual values of the predetermined indicators against the planned values and assessing the reasons for any significant deviations.
Contractual Obligations The licencee must comply with the specific licence requirements.

Appendix D

List of Acronyms

ACOP	Annual Compliance Operations Plan
AHA	Available Harvest Area
AOC	Area of Concern
AR	Annual Report
AWS	Annual Work Schedule
BA	Bachelor of Arts
BFPL	Buchanan Forest Products Ltd
B&S	Barren and Scattered
B Sc F	Bachelor of Science in Forestry
CCAA	Companies Creditors Arrangement Act
CFSA	Crown Forest Sustainability Act
CHPM	Cultural Heritage Predictive Model
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CSA-SFM	Canadian Standard Association-Sustainable Forest Management
DM	District Manager
EMA	Enhanced Management Area
EMS	Environmental Management System
ES	Ecosite
FIM	Forest Information Manual
FMP	Forest Management Plan
FMPM	Forest Management Planning Manual
FMNCP	Forest Management Native Consultation Program
FN	First Nation
FOIP	Forest Operations Information Program
FOIR	Forest Operations Inspection Report
FOP	Forest Operations Prescription
FRI	Forest Resource Inventory
FRTF	Forest Renewal Trust Fund
FSC	Forest Stewardship Council
FTG	Free-to-Grow
FU	Forest Unit
GIS	Geographic Information System
Ha	Hectares
IC	In Compliance
ICWC	In Compliance with Comments
IEA	Individual Environmental Assessment
IFA	Independent Forest Audit

IFAPP	Independent Forest Audit Process and Protocol
Km^2	Square Kilometres
Kms	Kilometres
LCC	Local Citizens Committee
m	Metres
m^3	Cubic Metres
m^3/yr	Cubic Metres per Year
MC	Mixed Conifer
MFP	McKenzie Forest Products
MOE	Ministry of Environment
MOU	Memorandum of Understanding
NDPEG	Natural Disturbance Pattern Emulation Guide
NIC	Not-in-Compliance
NRVIS	Natural Resource Values Information System
OMNR	Ontario Ministry of Natural Resources
PJ	Jack Pine
RD	Regional Director
R.P.F.	Registered Professional Forester
RPFO	Report of Past Forest Operations
RSA	Resource Stewardship Agreement
SEM	Silvicultural Effectiveness Monitoring
SEIM	Socio-Economic Impact Modeling
SEV	Statement of Environmental Value
SFI	Sustainable Forestry Initiative
SFL	Sustainable Forest Licence
SFMM	Strategic Forest Management Model
SGR	Silvicultural Ground Rule
SIP	Site Preparation
SPF	Spruce Pine Fir
SPU	Spruce Upland
SPL	Spruce Lowland
STP	Silvicultural Treatment Packages
T&C 34	Term and Condition #34 of the Class EA Report
TOR	Term of Reference

Appendix E

Summary of Input to Audit Process

The following paragraphs briefly summarize the contacts that were made and the issues/comments that were identified during the audit. Complete discussions of the issues, audit findings, assessments and any associated recommendations are discussed throughout the body of the report.

General Public / Other Stakeholders:

Public notices explaining the requirement for the Independent Audit, the date, a map of the Forest, and an invitation to provide comments on the forest management operations of AbitibiBowater were placed in the Sioux Lookout Bulletin and the Wawatay News. The notice invited interested parties to complete a survey on forest management on the Caribou Forest on the Arbex website.

A random mail out to 35% of the individuals and/or organizations listed in the 2008 FMP mailing list was also undertaken. This correspondence invited the recipient to complete a survey (mail-in or on-line) with respect to forest management on the Caribou Forest during the audit term and/or to contact the Auditor by mail, e-mail or telephone to express their concerns and views.

No responses to the public notices or the mail-out were received.

Tourism Operators

Telephone interviews were held with three (3) tourism operators:

- They were aware of the FMP process and the RSA process.
- They felt that the FMP appropriately recognized tourism values.
- They had concerns about the implementation of the FMP caribou strategy including its effect on recreational moose hunting.
- They had good working relationships with the Company representatives.

Municipal Representatives

Two interviews were held with municipal representatives. Their comments included;

- They were concerned that local people did not have adequate access to the forest due to road closures.
- A general concern about the downturn in the forest industry and the continued viability of the local industry.

- A specific concern that forestry operations did not generate much economic activity in the community of Savant Lake.
- There was a suggestion that forest company camps should be located within local communities, as opposed to Crown land, to maximize economic benefits.
- There was a concern that the public concerns were not always fully addressed in the FMP process.
- They felt that tourism operators concerns were being properly addressed.

Trapper/Private Citizen

The person interviewed was skeptical of the government's caribou management direction and planning. He felt that it was too theoretical and based on inadequate information about caribou requirements.

The LCC:

LCC members received an individual letter inviting their participation and offering the opportunity for a personal interview. Three LCC members were interviewed and an Auditor attended a full LCC meeting. LCC issues included;

- A desire to have increased involvement in forest management decision making.
- Concerns about the downturn in the forest economy and the economic and social impacts on local residents.
- Concerns about the impact of the caribou strategy on long term forest management and the continued viability of the forest industry.
- Concerns about slash and chipper debris left in the Forest.

Aboriginal Communities:

The Chiefs of all First Nations listed in the 2008 FMP received letters and follow-up telephone calls explaining the audit process and requesting their involvement. At their request, 2 First Nations were faxed the IFAPP criteria specific to Aboriginal Involvement in the planning process. Two telephone interviews were completed. The OMNR native liaison staff member was interviewed. General concerns included;

- A concern that there is a lack of funding and human resources in First Nation communities to effectively participate in forest management planning and decision making.

- A concern that native values be understood and respected in the forest management planning process.
- A concern that Aboriginal communities must achieve greater benefits from forest operations (i.e. employment).

Overlapping Licencees, Contractors and Commitment Holders:

Interviews were held with one contractor on the Forest. Identified concerns included;

- The long term viability of logging operations on the Caribou Forest.
- The current lack of markets for harvested wood.
- The current economic decline of the forest sector.

SFL Holder:

Throughout the course of the audit, AbitibiBowater staff members with significant roles in administration, planning, and operations on the Forest were interviewed and/or participated in meetings with the Auditors. Most of their comments are reflected in the main body of this audit report. Comments and concerns expressed included;

- Difficulties engaging Aboriginal communities in forest management discussions.
- Aboriginal leaders using the forest management planning process as a surrogate for larger grievances related to land ownership, aspects of self government, etc.
- The complexity, cost and length of time associated with the development of a FMP.
- A range of concerns associated with the costs of implementing the Caribou strategy.
- A general sense that the Planning team and AbitibiBowater had a good working relationship.
- The major challenges they are facing in marketing their products.

Ministry of Natural Resources:

Throughout the course of the audit all OMNR staff members with significant roles in administration, planning, and operations on the Forest were interviewed and/or

participated in meetings with the Auditors. Most of their comments are reflected in the main body of this audit report. Comments included:

- Difficulties "engaging" Aboriginal people and communities in forest planning (e.g. community background information, development of values maps).
- Aboriginal leaders using the forest management planning process as a surrogate for larger grievances related to land ownership, aspects of self government, etc.
- A sense that the OMNR and AbitibiBowater had a good working relationship.